at&t mobility corp.

NOTE TO GENERAL CONTRACTOR:
NO WORK IS TO BE PERFORMED ON THIS SITE WITHOUT REVIEW OF THE APPROVED STRUCTURAL ANALYSIS. IF ANY DISCREPANCIES ARE FOUND THE GENERAL CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING.

FA NUMBER: 14815360 / PACE NUMBER: MRPHL026861 / USID: 199507
SITE NAME: WLMG2 NODE 14H PROPOSED LIGHT POLE
SMALL CELL PROJECT/ RF DESIGN CONFIGURATION: MICRO

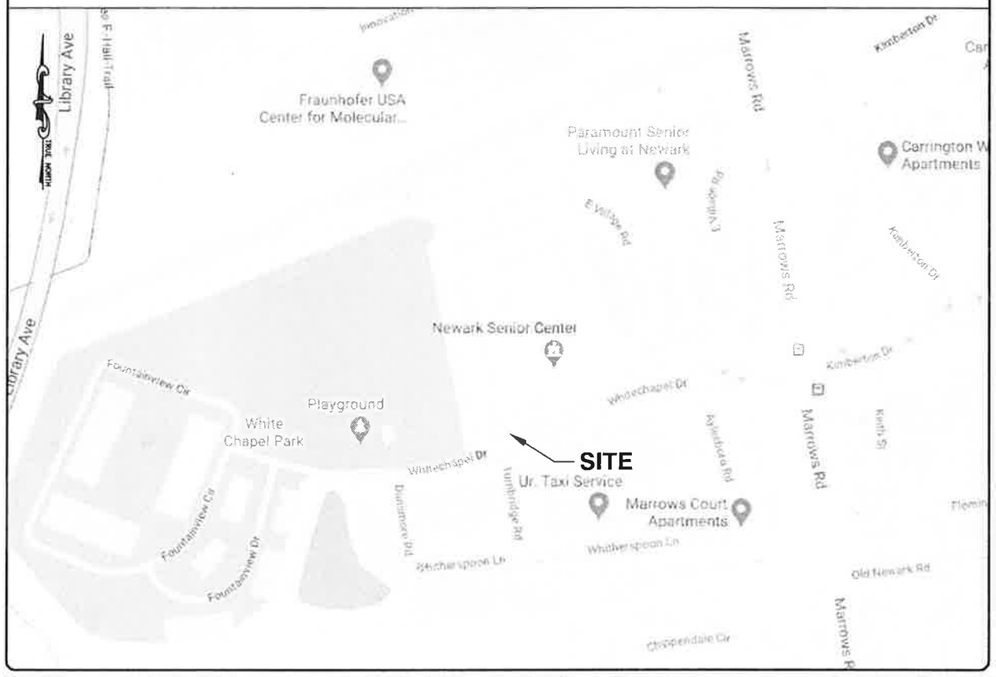
200 WHITECHAPEL DRIVE
NEWARK, DE 19713
CITY OF NEWARK, NEW CASTLE COUNTY

811 Know what's below. Call before you dig.

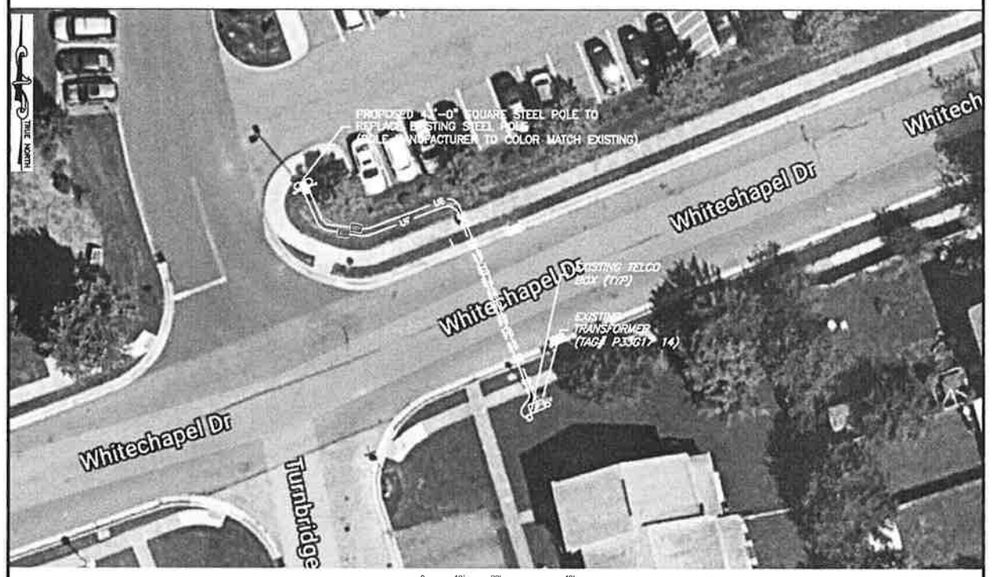
DELAWARE ONE CALL SYSTEM, INC. 1-800-257-7777 STOP-CALL BEFORE YOU DIG!

DELAWARE LAW REQUIRES THREE WORKING DAYS NOTICE PRIOR TO ANY EARTH MOVING ACTIVITIES

VICINITY MAP



AERIAL KEY



THESE DRAWINGS ARE SCALED TO FULL SIZE AT 22"X34" AND HALF SIZE AT 11"X17". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE DESIGNER / ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICE TO PREVENT STORM WATER POLLUTION DURING CONSTRUCTION.

PROJECT INFORMATION

SITE ADDRESS:	200 WHITECHAPEL DRIVE NEWARK, DE 19713
LATITUDE (NAD 83): LONGITUDE (NAD 83):	39.674495° -75.731508°
JURISDICTION:	CITY OF NEWARK NEW CASTLE COUNTY
CONSTRUCTION TYPE: USE GROUP:	IIB U
TELCO PROVIDER:	VERIZON
POWER PROVIDER:	DP&L 1-800-342-5775
GROUND ELEVATION:	80.0' AMSL
STRUCTURE OWNER:	N/A
PARCEL OWNER:	CITY OF NEWARK
PARCEL NUMBER:	18-027.00-017

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.

- 2018 INTERNATIONAL BUILDING CODE (IBC)
- 2014 NATIONAL ELECTRICAL CODE (NEC)
- NFPA 780, LIGHTNING PROTECTION CODE
- 2018 NFPA 101, LIFE SAFETY CODE
- 2015 IFC
- AMERICAN CONCRETE INSTITUTE (ACI)
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION
- MANUAL OF STEEL CONSTRUCTION 13TH EDITION
- ANSI/TIA-222-H
- TIA 607
- INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEER 81
- IEEE C2 NATIONAL ELECTRIC SAFETY CODE LATEST EDITION
- TELECORDIA GR-1275
- ANSI/T 311

DRAWING INDEX

ENGINEERING FIRM

NB+C TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
1777 SENTRY PARKWAY WEST
VEVA 17, SUITE 400
BLUE BELL, PA 19422
(267) 460-0122

APPLICANT

at&t mobility corp.

SITE INFORMATION

FA# 14815360
PACE# MRPHL026861
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WLMG2 NODE 14H
PROPOSED LIGHT POLE
200 WHITECHAPEL DRIVE
NEWARK, DE 19713
CITY OF NEWARK
NEW CASTLE COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
1	02/09/21	REVISED PER COMMENTS	KRK
0	01/26/21	PRELIMINARY CDs	JC

PROFESSIONAL STAMP

ENGINEER

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF DELAWARE
PROFESSIONAL ENGINEER
LICENSE #16876

SHEET TITLE

TITLE SHEET

SHEET NUMBER

SHEET 01 OF 16

GENERAL NOTES:

1. THE CONTRACTOR SHALL GIVE ALL NOTICE AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAS MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE AT&T CONSTRUCTION MANAGER OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL, OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN, EXCEPT FOR FIBER OPTIC CABLE AND OTHER MATERIALS IDENTIFIED BY AT&T.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWING/CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATION UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE, UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTIONS MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, AND KEEPING A COPY ON SITE, ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY TO ORIGINAL OR BETTER CONDITION.
12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
13. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
14. THE CONTRACTOR SHALL NOTIFY THE AT&T CONSTRUCTION MANAGER WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL IS RESOLVED BY THE AT&T CONSTRUCTION MANAGER.
15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE PROJECT.
16. OWNER/CONTRACTOR SHALL CONTACT ONE CALL MINIMUM 72 HOURS PRIOR TO THE START OF CONSTRUCTION FOR LOCATION OF EXISTING UNDERGROUND UTILITIES.
17. SUBMITTAL OF BID INDICATES THAT THE CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
18. THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE.
19. CONTRACTOR SHALL COORDINATE ALL WORK BETWEEN TRADES AND ALL OTHER SCHEDULING AND PROVISIONARY CIRCUMSTANCES SURROUNDING THE PROJECT.
20. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR COMPLETE AND FUNCTIONALLY OPERATING SYSTEMS ENERGIZED AND READY FOR USE THROUGHOUT AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
21. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION. LEGALLY DISPOSE OF ALL REMOVED, UNUSED AND EXCESS MATERIAL GENERATED BY THE WORK OF THIS CONTRACT. DELIVER ITEMS INDICATED ON THE DRAWINGS TO THE OWNER IN GOOD CONDITION. OBTAIN SIGNED RECEIPT UPON DELIVERY.
22. AFTER COMPLETION OF CONSTRUCTION, RED LINED AS-BUILT PLANS SHALL BE PROVIDED TO AT&T CONSTRUCTION MANAGER.

GROUNDING NOTES:

1. GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
2. ALL GROUNDING DEVICES SHALL BE U.L. APPROVED OR LISTED FOR THEIR INTENDED USE.
3. ALL WIRES SHALL BE AWG THHN/THWN COPPER UNLESS NOTED OTHERWISE.
4. GROUNDING CONNECTIONS TO GROUND RODS, GROUND RING WIRE, TOWER BASE AND FENCE POSTS SHALL BE EXOTHERMIC ("CADWELDS") UNLESS NOTED OTHERWISE. CLEAN SURFACES TO SHINY METAL. WHERE GROUND WIRES ARE CADWELDED TO GALVANIZED SURFACES, SPRAY CADWELD WITH GALVANIZING PAINT.
5. GROUNDING CONNECTIONS TO GROUND BARS ARE TO BE TWO-HOLE BRASS MECHANICAL CONNECTORS WITH STAINLESS STEEL HARDWARE (INCLUDING SCREW SET) CLEAN GROUND BAR TO SHINY METAL. AFTER MECHANICAL CONNECTION, TREAT WITH PROTECTIVE ANTIOXIDANT COATING.
6. ROUTE GROUNDING CONDUCTORS THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 12" RADIUS.
7. INSTALL #2 AWG GREEN-INSULATED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND #2 TINNED SOLID COPPER WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.
8. REFER TO GROUNDING PLAN FOR GROUND BAR LOCATIONS. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("CADWELDS") TO ANTENNA MOUNTS AND GROUND RING. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO-HOLE LUGS.
9. THE GROUND ELECTRODE SYSTEM SHALL CONSIST OF DRIVEN GROUND RODS POSITION ACCORDING TO GROUNDING PLAN. THE GROUND RODS SHALL BE 5/8"X10'-0" COPPER CLAD STEEL INTERCONNECTED WITH #2AWG BARE, TINNED SOLID COPPER WIRE BURIED 36" BELOW GRADE. BURY GROUND RODS A MAXIMUM OF 15' APART, AND A MINIMUM OF 6' APART.
10. IF ROCK IS ENCOUNTERED GROUND RODS SHALL BE PLACED AT AN OBLIQUE ANGLE NOT TO EXCEED 45'.
11. EXOTHERMIC WELDS SHALL BE MADE IN ACCORDANCE WITH ERICO PRODUCTS BULLETIN A-AT OR EQUAL.
12. CONSTRUCTION OF GROUND RING AND CONNECTIONS TO EXISTING GROUND RING SYSTEM SHALL BE DOCUMENTED WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PROVIDE PHOTOS TO THE AT&T CONSTRUCTION MANAGER.
13. ALL GROUND LEADS EXCEPT THOSE TO THE EQUIPMENT ARE TO BE #2 TINNED SOLID COPPER WIRE. ALL EXTERIOR GROUND BARS TINNED COPPER.
14. PRIOR TO INSTALLING LUGS ON GROUND WIRES, APPLY THOMAS & BETTS KOPR-SHIELD (TM OF JET LUBE INC.). PRIOR TO BOLTING GROUND WIRE LUGS TO GROUND BARS, APPLY KOPR-SHIELD OR EQUAL.
15. ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM TO TEST AND VERIFY THAT IMPEDANCE DOES NOT EXCEED FIVE OHMS TO GROUND BY MEANS OF "FALL OF POTENTIAL TEST". TEST SHALL BE WITNESSED BY A AT&T REPRESENTATIVE, AND RECORDED ON THE "GROUND RESISTANCE TEST" FORM.
16. WHERE BARE COPPER GROUND WIRES ARE ROUTED FROM ANY CONNECTION ABOVE GRADE TO GROUND RING, INSTALL WIRE IN 3/4" PVC SLEEVE, FROM 1' BELOW GRADE AND SEAL TOP WITH SILICONE MATERIAL.
17. PREPARE ALL BONDING SURFACES FOR GROUNDING CONNECTIONS BY REMOVING ALL PAINT AND CORROSION DOWN TO SHINY METAL. FOLLOWING CONNECTION, APPLY APPROPRIATE ANTI-OXIDIZATION PAINT.
18. ANY SITE WHERE THE EQUIPMENT (BTS, CABLE BRIDGE, PPC, GENERATOR, ETC.) IS LOCATED WITHIN 6 FEET OF METAL FENCING, THE GROUND RING SHALL BE BONDED TO THE NEAREST FENCE POST USING (3) RUNS OF #2 BARE TINNED COPPER WIRE.

GROUNDING GUIDELINES:

ALL EQUIPMENT THAT IS INSTALLED AND MAY CAUSE ANY KIND OF ELECTRICAL CHARGE OR BUILD UP MUST HAVE PROPER AND ADEQUATE GROUNDING IN PLACE TO PREVENT FROM EQUIPMENT DAMAGE AND SHOCK HAZARDS.

RRH'S

MUST BE GROUND TO A MAIN BUSS BAR OR HOWE RUN GROUND FROM THE GROUND PIN OR STUD THAT IS ON THE CHASSIS. IF ANY EQUIPMENT HAS A GROUND POINT ON IT. IT SHOULD BE GROUND. THE GROUNDING CABLE SIZE SHOULD FOLLOW LOCAL GUIDELINES ON EQUIPMENT GROUNDING. NORMALLY THE STANDARD IS 6 UV RATED STRANDED GROUND CABLE TO BE USED ON RRH'S. THE LUG NEEDS TO FIT THE PROPER CABLE SIZE AS WELL AS THE HOLE SIZE FOR THE STUD. IF IT'S A SINGLE STUD IT SHOULD BE A ONE HOLE LUG, IF IT HAS A PLACE FOR TWO HOLE LUG THEN THAT SHOULD BE USED. (I.E. COMMSCOPE ION M HAS A SINGLE STUD GROUND, TE PRISM HAS A GROUND FOR A 2 HOLE LUG.) DO NOT CUT THE LUGS TO FIT. THEY MAKE LUGS IN ALL SHAPES AND SIZES. ORDER THE CORRECT ONE AND ATTACH IT PROPERLY.

SURGE ARRESTORS

IF IT HAS A PLACE FOR A GROUND – GROUND IT.

MAST PIPES

ALL MAST PIPES SHOULD BE GROUND WITH BEAR METAL ON THE PLACE THE GROUND IS ATTACHED AND THEN COLD GALVANIZATION OVER THE BARE METAL TO PREVENT RUST. THE GROUND CAN BE ATTACHED MECHANICALLY OR AN EXOTHERMIC WELD (A CAD WELD) MAY BE USED. IF THE MAST PIPE IS THE TALLEST POINT ON A BUILDING IT SHOULD ALSO HAVE A LIGHTNING ROD ATTACHED TO IT AS WELL.

DIPLEXERS/DUPLEXERS/SPLITTERS/PASSIVE COMPONENTS

IF IT HAS A PLACE FOR A GROUND TO BE INSTALLED – INSTALL IT.

ANY STRUCTURE OR FRAME SHOULD HAVE #2 GROUND WIRE, I.E. MAST PIPES, OUTDOOR ENCLOSURES, SHROUDS, BUSS BAR HOME RUN TO EARTH GROUND. ALL EQUIPMENT HAS #6 TO BUSS BARS.

ALL BUSS BARS NEED TO HAVE A LINK TO AN EARTH GROUND SYSTEM AND MUST BE ISOLATED IF MOUNTED ON ANYTHING THAT MAY RETAIN AN ELECTRIC CHARGE. NO EXCEPTIONS. ALL EQUIPMENT SHOULD RUN TO BUSS BARS. LUGS ON BUSS BARS SHOULD HAVE FRONT AND BACK FLAT WASHERS SANDWICHING THE LUG(S) TO THE BAR AND NOT OVERLAPPING CAUSING IT TO HOLD OR PIN DOWN OTHER LUGS ON THE BAR. THERE SHOULD ALWAYS BE A LOCK WASHER CLOSEST TO THE NUT ON THE BOLT FOR A LUG. NEVER IS IT OK TO STACK LUGS ON TOP OF EACH OTHER. IF THERE IS NOT ENOUGH SPACE, GET A BIGGER BUSS BAR. THEY SHOULD ALL HAVE A DIRECT CONTACT TO A BUSS BAR WITH NO-OX COATED BETWEEN THE LUG AND THE BUSS BAR. ALL GROUNDS SHOULD HAVE HEAT SHRINK OVER THE LUG (UNLESS IT'S NON-JACKETED WIRE). ALL LUGS NEED TO BE CRIMPED ON SECURELY WITH THE PROPER DYE AND TOOL (NOT CHANNEL LOCK CRIMPED). THERE SHOULD BE NO MORE THAN 1/16 INCH BARE CABLE SHOWING (SHINER) BETWEEN THE JACKET AND THE LUG. INSIDE LUGS SHOULD HAVE CLEAR HEAT SHRINK TO INSPECT THE CRIMPS AND SHINERS. INSIDE LUGS SHOULD HAVE INSPECTION WINDOWS TO SHOW THE GROUND WIRE IS INSERTED INTO THE LUG ALL THE WAY AND IS PROPERLY INSTALLED. OUTDOOR LUGS MAY HAVE BLACK OR GREEN HEAT SHRINK.

WEATHER SEAL GUIDELINES:

BUTYL

1. PRE WRAP ALL CONNECTIONS WITH BLACK ELECTRICAL TAPE TO COVER ALL METAL SHOWING TO PREVENT DAMAGE TO CONNECTOR WHEN WEATHER SEAL IS TO BE REMOVED. 3/4 INCH OR 2 INCH TAPE CAN BE USED FOR THIS PROCESS.
2. WRAP CONNECTIONS WITH BUTYL WEATHER SEALANT WITH TWO LAYERS TO FORM A CONE LIKE SHAPE, OVER LAPPING THE LAYERS BY AT LEAST 50%. MOLD SEALANT TO PROPER SHAPE. THIS STEP IS CRUCIAL OR THE BUTYL WILL LEAK OVER TIME.
3. WRAP SEALANT WITH 2 LAYERS OF 2 INCH TAP, (YOU CAN CUT INTO STRIPS IN TIGHT AREAS). FIRST WRAP SHOULD BE PULLED SMOOTH TO MAKE FINAL WRAPS CLEAN AND CRISP. 2ND WRAP SHOULD BE PULLED TIGHTER THAN FIRST TO HOLD SEALANT INTO PROPER (CONE LIKE) SHAPE. OVER LAPPING TAPE SHOULD COVER AT LEAST 50% OF EACH LAYER OF TAPE PRIOR.
4. UPON COMPLETION OF 2 LAYERS OF 2 INCH TAPE FINALIZE WITH AT LEAST 3 LAYERS OF 3/4 INCH TAPE. EACH WRAP OF TAPE SHOULD BE PULLED TIGHTER THAN WRAP BEFORE TO SQUEEZE SEALANT INTO A MOLD AND WILL PREVENT ANY SEALANT FROM LEAKING OUT THE SIDES OVER TIME. EACH LAYER SHOULD COVER PRIOR LAYERS AT LEAST 50%.
5. OVERLAP THE TAPE 50% OF THE PREVIOUS LAYER.
6. ALWAYS FINISH THE LAST WRAP OF TAPE GOING UP TO CREATE A SHINGLING OF THE TAPE SO IN THE WEATHER ANYTHING THAT RUNS DOWN THE CABLE WILL NOT LEAK INTO THE SEALANT. CUT THE END OF THE TAPE AND LAY IT ONTO THE FINISH. DO NOT STRETCH THE END OF THE TAPE. THIS WILL CAUSE THE TAPE TO PULL OFF OVER TIME AND CREATE A FLAGGING AFFECT.

FUSION TAPE

1. CHECK TO MAKE SURE ALL CONNECTORS ARE TORQUED TO PROPER SPECIFICATIONS BEFORE YOU BEGIN.
2. NOTE: THIS STEP DOES NOT NEED A CURTISY WRAP BECAUSE THE TAPE DOES NOT ACTUALLY ADHERE TO THE CONNECTOR ITSELF BUT BINDS TO ITSELF. ALSO KNOWN AS "SELF-AMALGAMATING TAPE.
3. WRAP CONNECTIONS FUSION TAPE SEALANT WITH TWO LAYERS TO FORM A CONE LIKE SHAPE. FUSION TAPE MUST OVER LAP AT LEAST 50% TO FORM A PROPER SEAL. COVER ALL OF THE BARE METAL SHOWING (AT LEAST 1-1/2 INCH PAST END OF CONNECTOR.)
4. IF THIS "TAPE" IS NOT PULLED TIGHT WHILE WRAPPING YOU WILL NOT CREATE A PROPER SEAL, IT MUST BE STRETCHED TO CREATE BOND TO ITSELF.
5. WRAP AT LEAST 2 LAYERS OF 3/4 INCH TAPE. EACH LAYER SHOULD COVER AT LEAST 50% OF PREVIOUS TAPE WRAP.
6. ALWAYS FINISH THE LAST WRAP OF TAPE GOING UP TO CREATE A SHINGLING OF THE TAPE SO IN THE WEATHER ANYTHING THAT RUNS DOWN THE CABLE WILL NOT LEAK INTO THE SEALANT. CUT THE END OF THE TAPE AND LAY IT ONTO THE FINISH. DO NOT STRETCH THE END OF THE TAPE. THIS WILL CAUSE THE TAPE TO PULL OFF OVER TIME AND CREATE A FLAGGING AFFECT.

HEAT SHRINK

1. PRE WRAP ALL CONNECTIONS WITH BLACK ELECTRICAL TAPE TO COVER ALL METAL SHOWING TO PREVENT DAMAGE TO CONNECTOR WHEN WEATHER SEAL IS TO BE REMOVED. 3/4 INCH OR 2 INCH TAPE CAN BE USED FOR THIS PROCESS.
2. USE ONLY OUTDOOR RATED HEAT SHRINK THAT HAS THE SELF-ADHESIVE WHEN HEATED PROPERLY. THIS IS WHAT WILL CREATE THE SEAL TO THE CONNECTOR.
3. MAKE SURE HEAT SHRINK COVERS ALL OF THE COUPLERS AND CONNECTIONS. HEAT THE HEAT SHRINK TO SHRINK TIGHTLY TO THE CONNECTIONS AND CABLE. MAKE SURE THE HEAT SHRINK IS SEALED TOP AND BOTTOM OF THE CONNECTIONS. ALSO CHECK TO MAKE SURE HEAT SHRINK WAS NOT OVER HEATED AND THERE ARE NO BREAKS IN SEAL THROUGH-OUT THE SHRINK TUBING.

ANDREWS CLAM SHELL

1. PROPERLY TORQUE CONNECTOR TO SPECIFICATION.
2. APPLY ONE LAYER OF 3/4 INCH BLACK TAPE AROUND ENTIRE CONNECTOR ENDING AT LEAST 1-1/2 INCHES PAST TOP AND BOTTOM OF CONNECTOR TO PREVENT ANY MOISTURE FROM STICKING TO THE CONNECTOR.
3. INSPECT THE DEVICE TO MAKE SURE IT IS NOT CHIPPED, CRACKED OR ANY SIGNS OF NEGLECT THAT WILL TAKE AWAY FROM MAKING A FULL SEAL AROUND THE CONNECTOR.
4. USE ONLY CORRECT SIZE PER CABLE AND CONNECTOR TYPE – I.E: 1/2 INCH FOR 1/2 INCH NOT 7/8TH FOR 1/2 INCH.
5. FOLLOW DIRECTIONS THAT COME WITH PRODUCT – MOST CLAM SHELL TYPE SEALANT DEVICES WRAP AROUND OR CLAMP AROUND A CONNECTION POINT.
6. BE CAREFUL WHEN SETTING LOCKING DEVICE INTO PLACE ON CLAM SHELL STYLE SEALANTS (THEY ARE PLASTIC AND TEND TO BREAK OR CRACK IN EXTREME WEATHER CONDITIONS WHEN LOCKING DEVICE CLOSED TO CREATE THE SEAL.) IF THE LOCKING MECHANISM CRACKS OR BREAKS, REPLACE IT. DO NOT TAPE THE CLAMP CLOSED OR TRY TO RE-ENGINEER IT.
7. ONCE THE CLAMP IS ON AND LOCKED AROUND THE CONNECTOR THE PROCESS IS COMPLETE.

PPC BOOT

1. PLACE BOOT OVER CABLE BEFORE CONNECTOR IS ATTACHED TO CABLE. THIS IS ONLY RATED FOR PPC TYPE CONNECTORS. (NOTE: IF THIS STEP IS SKIPPED OR NOT COMPLETED BEFORE MAKING A CONNECTOR THE SUBCONTRACTOR WILL NOT BE ABLE TO USE THE BOOT STYLE DEVICE TO SEAL THE CONNECTOR. IT IS NOT RECOMMENDED TO WASTE A CONNECTOR AND CUT IT OFF AND START AT STEP NO. 1 AGAIN. SINCE PPC CONNECTORS ARE NOT REUSABLE AND CAN GET QUITE EXPENSIVE. DO NOT TRY TO STRETCH THE BOOT TO SLIDE IT OVER THE CONNECTION.)
2. PLACE THE BOOT OVER THE CABLE, AND THEN MAKE THE CONNECTOR.
3. TORQUE THE CONNECTION TO PROPER SPECIFICATIONS.
4. SLIDE BOOT UP TO COVER THE ENTIRE CONNECTOR, FOLLOWING THE PPC GUIDELINES.
5. THIS PROCESS IS COMPLETE AT THIS TIME.

ELECTRICAL NOTES

1. SUBMITTAL OF BID INDICATES THAT THE CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
2. CONTRACTOR SHALL PERFORM ALL VERIFICATIONS, OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO ORDERING OF ANY EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE PROJECT MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCES.
3. VERIFY HEIGHTS WITH PROJECT MANAGER PRIOR TO INSTALLATION.
4. THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE.
5. CONTRACTOR SHALL COORDINATE ALL WORK BETWEEN TRADES AND ALL OTHER SCHEDULING AND PROVISIONARY CIRCUMSTANCES SURROUNDING THE PROJECT.
6. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR COMPLETE AND FUNCTIONALLY OPERATING SYSTEMS ENERGIZED AND READY FOR USE THROUGHOUT AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
7. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. ELECTRICAL MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION OVER THE CONSTRUCTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH ALL CURRENT APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU. ALL MATERIALS AND EQUIPMENT SHALL BE APPROVED FOR THEIR INTENDED USE AND LOCATION.
8. ALL WORK SHALL COMPLY WITH ALL APPLICABLE GOVERNING STATE, COUNTY AND CITY CODES AND OSHA, NFPA, NEC & ASHRAE REQUIREMENTS.
9. ENTIRE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE. ALL WORK, MATERIAL AND EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
10. PROPERLY SEAL ALL PENETRATIONS. PROVIDE UL LISTED FIRE-STOPS WHERE PENETRATIONS ARE MADE THROUGH FIRE-RATED ASSEMBLIES. WATER-TIGHT USING SILICONE SEALANT.
11. LOCATE ALL PENETRATIONS SUCH THAT ALL REINFORCEMENT CONTAINED WITHIN THE EXISTING BUILDING CONSTRUCTION REMAINS INTACT AND UNDISTURBED. SUBMIT LOCATING METHOD TO THE PROJECT MANAGER FOR APPROVAL PRIOR TO EXECUTION.
12. DELIVER ALL BROCHURES, OPERATING MANUALS, CATALOGS AND SHOP DRAWINGS TO THE PROJECT MANAGER AT JOB COMPLETION. PROVIDE MAINTENANCE MANUALS FOR MECHANICAL EQUIPMENT. AFFIX MAINTENANCE LABELS TO MECHANICAL EQUIPMENT.
13. ALL CONDUCTORS SHALL BE COPPER. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG., UNLESS OTHERWISE NOTED. CONDUCTORS SHALL BE TYPE THHW, RATED IN ACCORDANCE WITH NEC 110-14(C).
14. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THE MAXIMUM INTERRUPTING CURRENT TO WHICH THEY MAY BE SUBJECTED.
15. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE; ARTICLES 250 & 810 AND THE UTILITY COMPANY STANDARDS.
16. CONDUIT: ALL ABOVE GRADE CONDUITS SHALL BE RIGID & LFNC TO 6' AS STATED BELOW:
    A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
    B. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL. FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
    C. LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE U.L. LISTED AND SHALL BE USED AT FINAL CONNECTIONS TO MECHANICAL EQUIPMENT & RECTIFIERS AND WHERE PERMITTED BY CODE. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL CONTAIN A FULL-SIZE GROUND CONDUCTOR.
    D. CONDUIT RUNS SHALL BE SURFACE MOUNTED ON CEILINGS OR WALLS UNLESS NOTED OTHERWISE. ALL CONDUIT SHALL RUN PARALLEL OR PERPENDICULAR TO WALLS, FLOOR, CEILING, OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH THE PROJECT MANAGER PRIOR TO INSTALLING.
    E. PVC CONDUIT MAY BE PROVIDED ONLY WHERE SHOWN, OR IN UNDERGROUND INSTALLATIONS. PROVIDE UV-RESISTANT CONDUIT WHERE EXPOSED TO THE ATMOSPHERE. PROVIDE GROUND CONDUCTOR IN ALL PVC RUNS; EXCEPT WHERE PERMITTED BY CODE TO OMIT.
17. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PHENOLIC PLASTIC NAMEPLATES. METER, DISCONNECT, ETC. BACKGROUND SHALL BE BLACK WITH WHITE LETTERS; EXCEPT AS REQUIRED BY CODE TO FOLLOW A DIFFERENT SCHEME.
18. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.
19. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION. LEGALLY DISPOSE OF ALL REMOVED, UNUSED AND EXCESS MATERIAL GENERATED BY THE WORK OF THIS CONTRACT. DELIVER ITEMS INDICATED ON THE DRAWINGS TO THE OWNER IN GOOD CONDITION. OBTAIN SIGNED RECEIPT UPON DELIVERY.
20. COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS SHALL BE PAID BY THE CONTRACTOR.
21. VERIFY ALL EXISTING CIRCUITRY PRIOR TO REMOVAL AND NEW WORK. MAINTAIN POWER TO ALL OTHER AREAS & CIRCUITS NOT SCHEDULED FOR REMOVAL.
22. RED LINED AS-BUILT PLANS SHALL BE PROVIDED TO THE CONSTRUCTION MANAGER UPON REQUEST.

AT&T STANDARDS: ATT-TP 76300, ATT-TP 76416, & UPDATES AS REQUIRED.

ENGINEERING FIRM

NB+C™
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
1777 SENTRY PARKWAY WEST
VEVA 17, SUITE 400
BLUE BELL, PA 19422
(267) 460-0122

APPLICANT

at&t mobility corp.

SITE INFORMATION

FA# 14815360
PACE# MRPHL026861
USID# 199507
WLMG2 NODE 14H
PROPOSED LIGHT POLE
200 WHITECHAPEL DRIVE
NEWARK, DE 19713
CITY OF NEWARK
NEW CASTLE COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
1	02/09/21	REVISED PER COMMENTS	KRK
0	01/26/21	PRELIMINARY CDs	JC

PROFESSIONAL STAMP

ENGINEER

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF DELAWARE
PROFESSIONAL ENGINEER
LICENSE #16876

SHEET TITLE

GENERAL NOTES

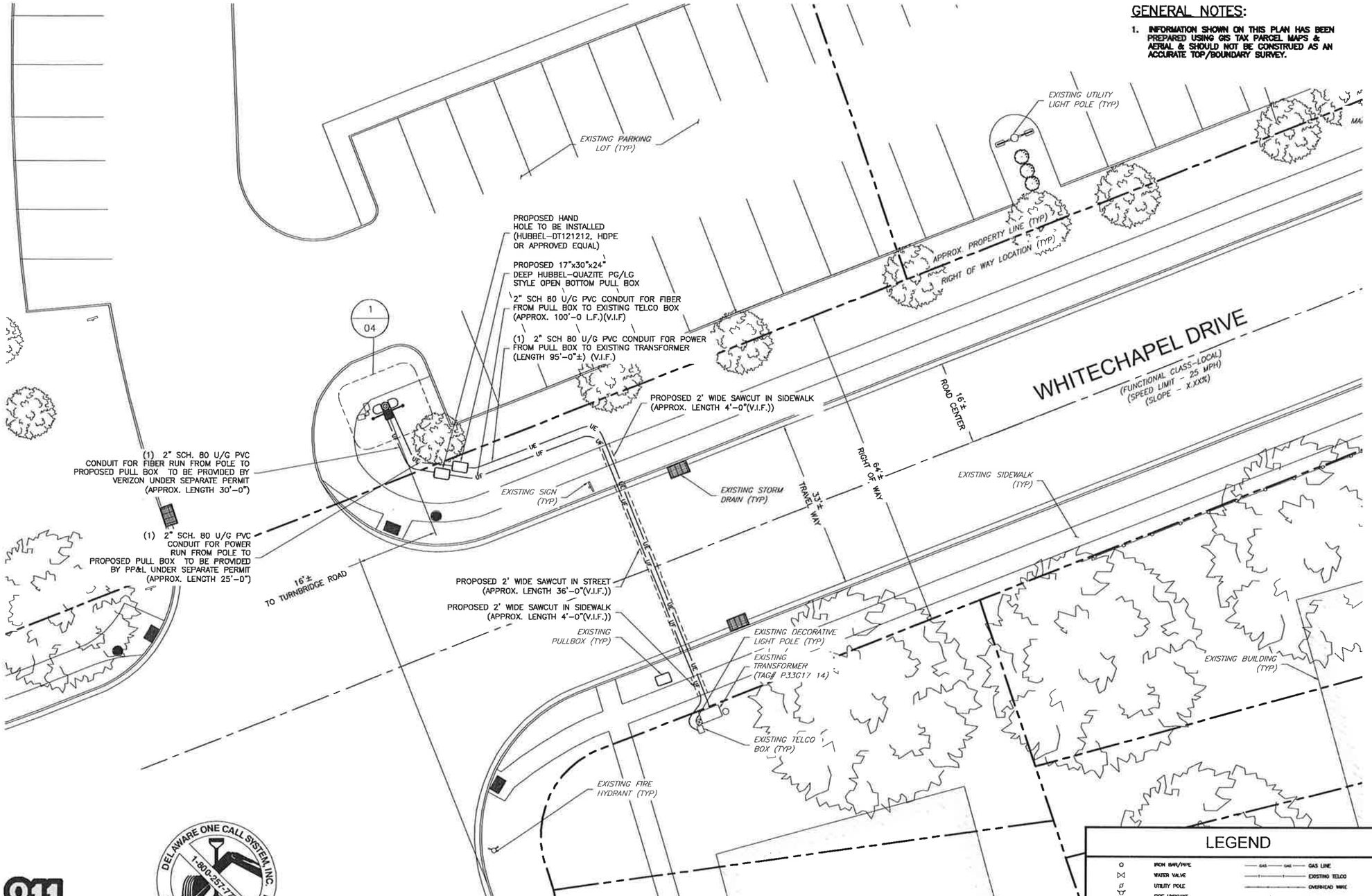
SHEET NUMBER

SHEET 02 OF 16

TRUE NORTH

GENERAL NOTES:

1. INFORMATION SHOWN ON THIS PLAN HAS BEEN PREPARED USING GIS TAX PARCEL MAPS & AERIAL & SHOULD NOT BE CONSTRUED AS AN ACCURATE TOP/BOUNDARY SURVEY.



LEGEND

IRON BAR/PIPE	GAS LINE
WATER VALVE	EXISTING TELCO
UTILITY POLE	OVERHEAD WIRE
FIRE HYDRANT	UNDERGROUND WIRE
TREES/LANDSCAPING	PROPOSED CONTOURS
MANHOLES	EXISTING CONTOURS
PROPERTY LINE	PROPOSED ELECTRIC
ADJACENT PROPERTY LINE	PROPOSED TELCO
PROPERTY SETBACK LINE	UNDERGROUND FIBER
RIGHT OF WAY	UNDERGROUND ELECTRIC
ZONING DISTRICT LINE	CHAIN LINK FENCE
ELECTRIC	TREELINE

Know what's below. Call before you dig.

DELAWARE ONE CALL SYSTEM, INC. 1-800-257-7777 STOP–CALL BEFORE YOU DIG!

DELAWARE LAW REQUIRES THREE WORKING DAYS NOTICE PRIOR TO ANY EARTH MOVING ACTIVITIES

1 / 03 SITE PLAN
SCALE: 1" = 10' (22X34)
SCALE: 1" = 20' (11X17)

GRAPHIC SCALE
10 0 5 10 20 40
1 INCH = 10 FEET (22X34)
1 INCH = 20 FEET (11X17)

ENGINEERING FIRM

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NB+C ENGINEERING SERVICES, LLC.
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PROFESSIONAL STAMP

ENGINEER

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF DELAWARE
PROFESSIONAL ENGINEER
LICENSE #16876

SHEET TITLE

SITE PLAN

SHEET NUMBER

SHEET 03 OF 16

TRUE NORTH

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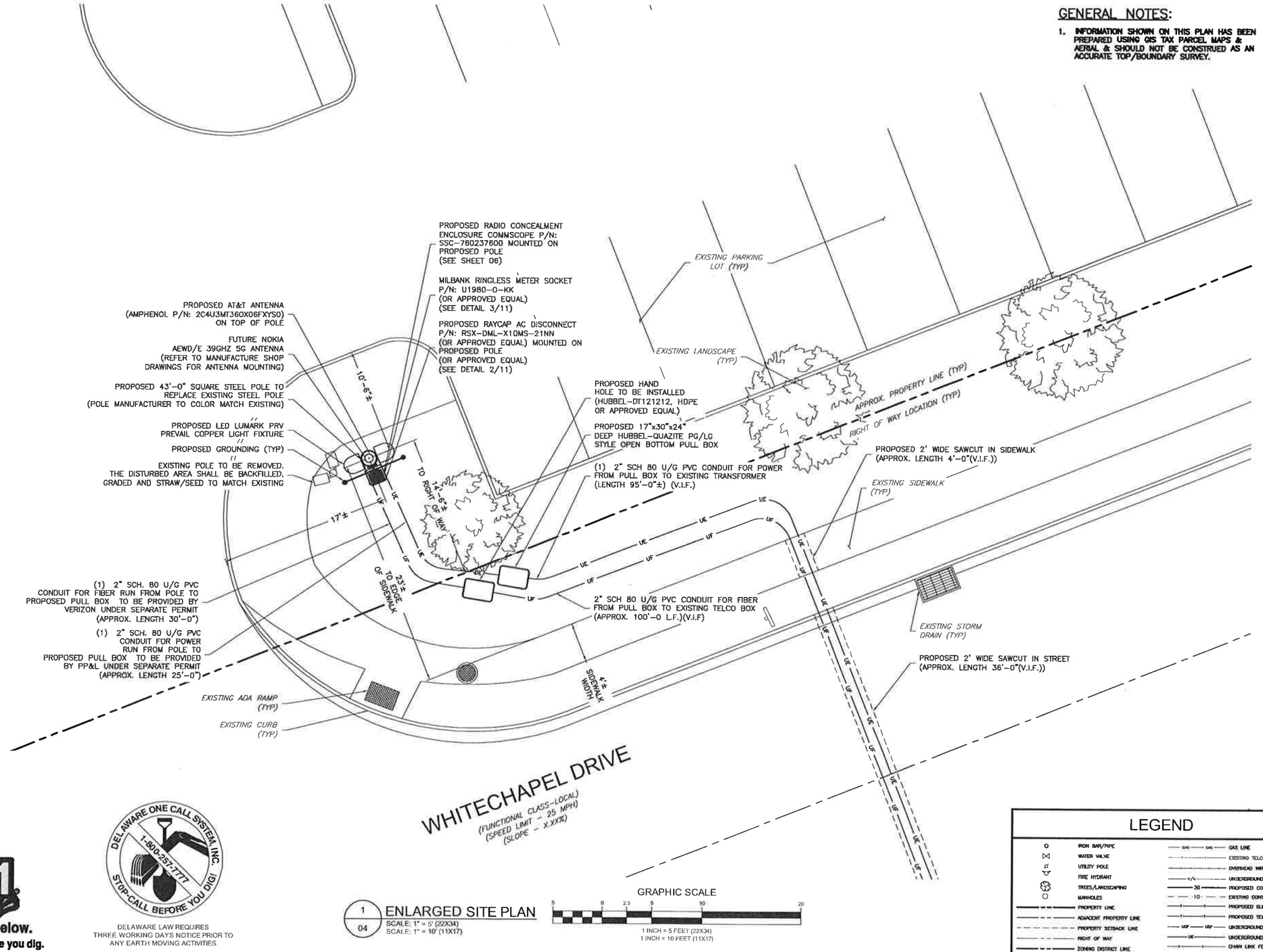

1/04 ENLARGED SITE PLAN
SCALE: 1" = 5' (22X34)
SCALE: 1" = 10' (11X17)

GRAPHIC SCALE
5 0 2.5 5 10 20
1 INCH = 5 FEET (22X34)
1 INCH = 10 FEET (11X17)

LEGEND

IRON BAR/PIPE	GAS LINE
WATER VALVE	EXISTING TELCO
UTILITY POLE	OVERHEAD WIRE
FIRE HYDRANT	U/G UNDERGROUND WIRE
TREES/LANDSCAPING	PROPOSED CONTOURS
MANHOLES	EXISTING CONTOURS
PROPERTY LINE	PROPOSED ELECTRIC
ADJACENT PROPERTY LINE	PROPOSED TELCO
PROPERTY SETBACK LINE	UGF UNDERGROUND FIBER
RIGHT OF WAY	UE UNDERGROUND ELECTRIC
ZONING DISTRICT LINE	CHAIN LINK FENCE
ELECTRIC	TREELINE

811 Know what's below. Call before you dig.

DELAWARE ONE CALL SYSTEM, INC. 1-800-257-7777 STOP-CALL BEFORE YOU DIG!

DELAWARE LAW REQUIRES THREE WORKING DAYS NOTICE PRIOR TO ANY EARTH MOVING ACTIVITIES

ENGINEERING FIRM

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ENGINEER

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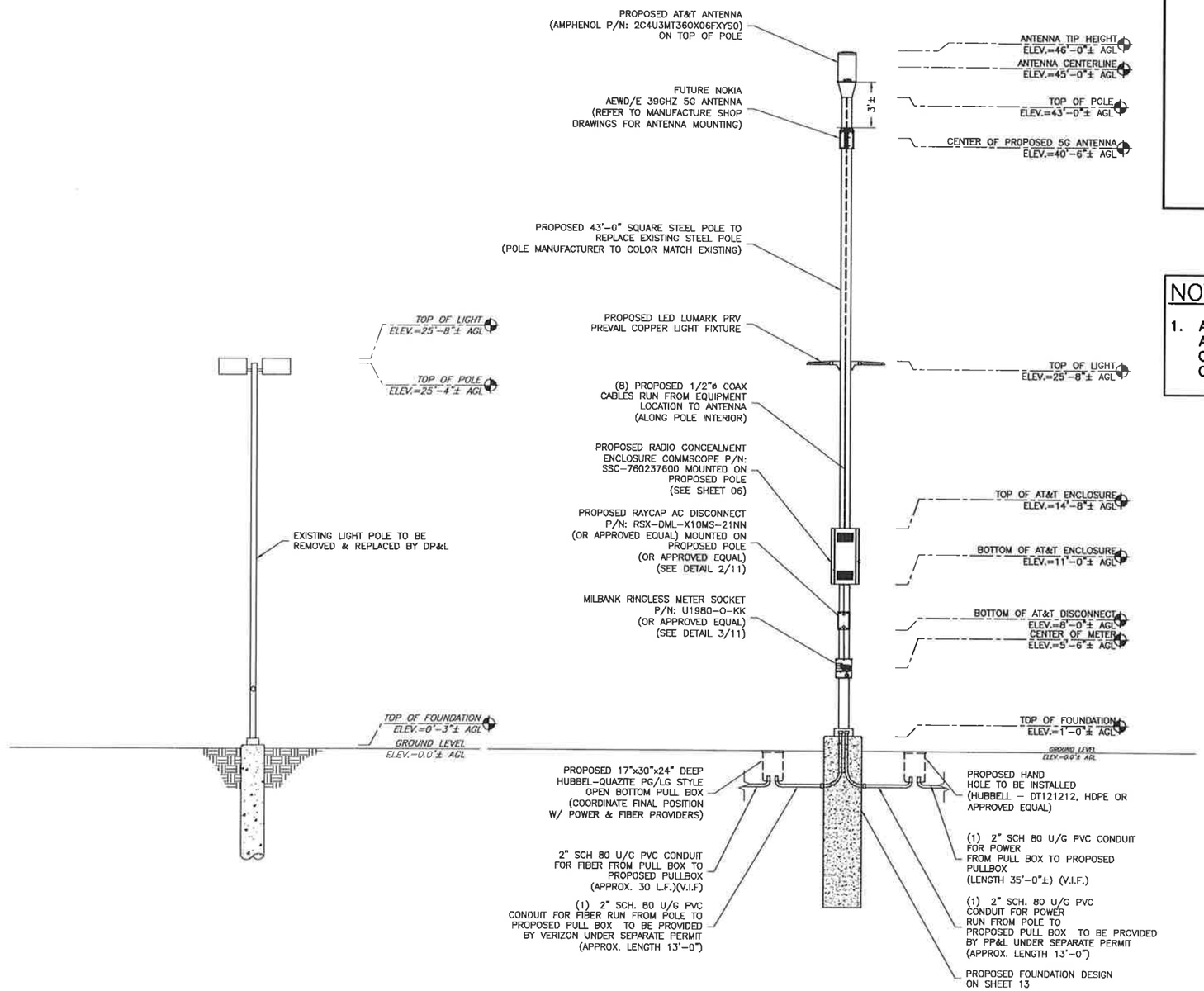
STATE OF DELAWARE
PROFESSIONAL ENGINEER
LICENSE #16876

SHEET TITLE

ENLARGED SITE PLAN

SHEET NUMBER

SHEET 04 OF 16



1/05 EXISTING ELEVATION
SCALE: 1"=4'

2/05 PROPOSED ELEVATION
SCALE: 1"=4'

EXISTING CONDITIONS

NOTE:

1. ALL EQUIPMENT, CABLES AND ANTENNAS TO BE PAINTED OR ORDERED TO MATCH THE EXTERIOR COLOR OF THE STRUCTURE.

GRAPHIC SCALE
8 4 0 1 2 4 8
1/4 INCH = 1 FOOT (22X34)
1/8 INCH = 1 FOOT (11X17)

ENGINEERING FIRM

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ENGINEER

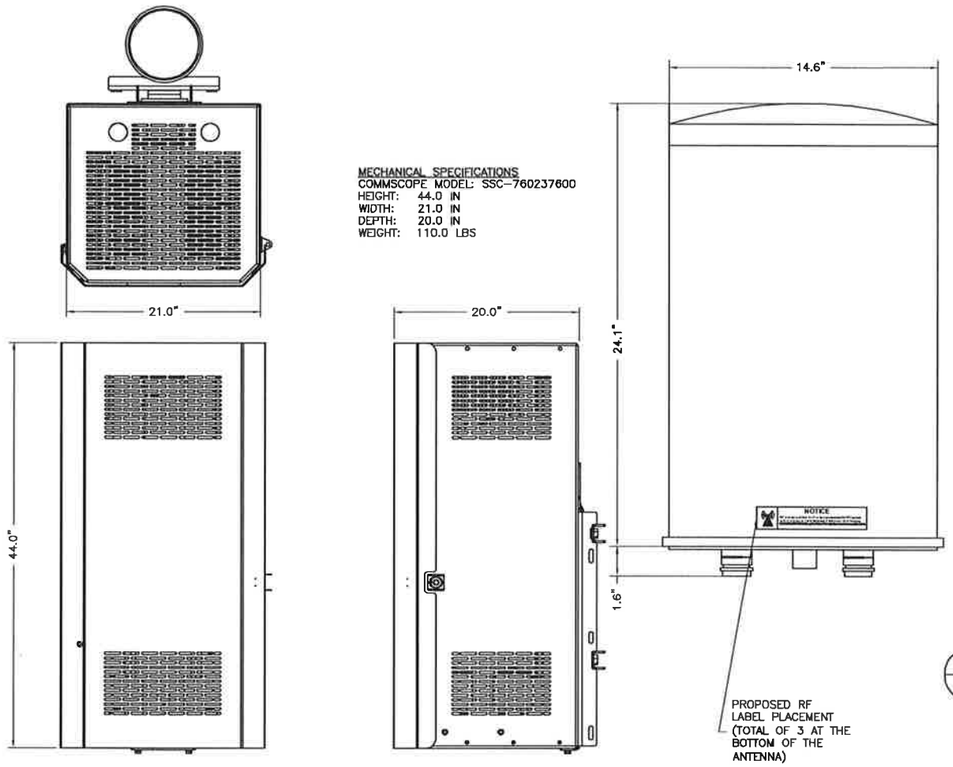
KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF DELAWARE
PROFESSIONAL ENGINEER
LICENSE #16876

SHEET TITLE

EXISTING & PROPOSED ELEVATION

SHEET NUMBER

SHEET
05 OF 16

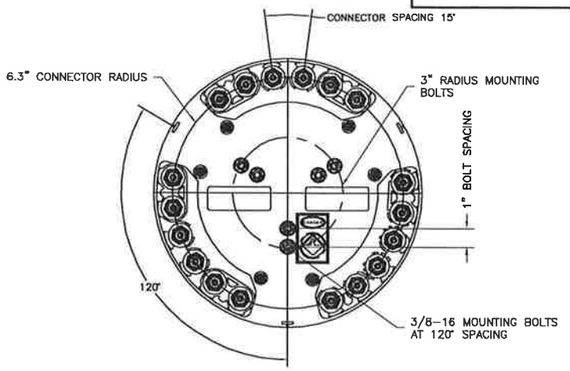


MECHANICAL SPECIFICATIONS
COMMSCOPE MODEL: SSC-760237600
HEIGHT: 44.0 IN
WIDTH: 21.0 IN
DEPTH: 20.0 IN
WEIGHT: 110.0 LBS

1/06 MICRO COMMSCOPE ENCLOSURE DETAIL
NTS

MOUNTING NOTE:

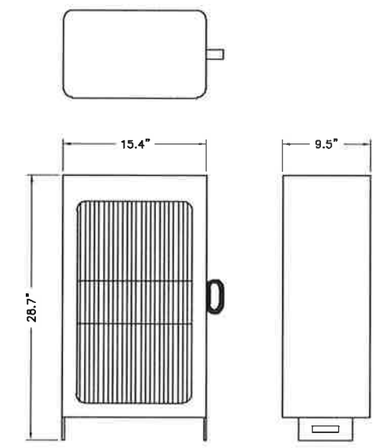
IF FIELD CONDITIONS DO NOT ALLOW FOR INSTALLATION AS DIRECTED, CONTRACTOR IS TO CONTACT ENGINEER FOR FURTHER INSTRUCTION.



MECHANICAL SPECIFICATIONS

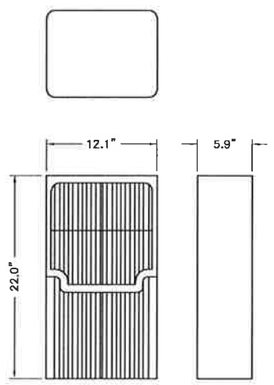
ANTENNA WEIGHT	25 LBS
ANTENNA DIAMETER	14.6"
ANTENNA HEIGHT FRONT	24.1"
WIND LOAD SURVIVAL	100 MPH

2/06 AMPHENOL 2C4U3MT360X06FXYS0 ANTENNA DETAIL
NTS



WEIGHT = 101.4 LB

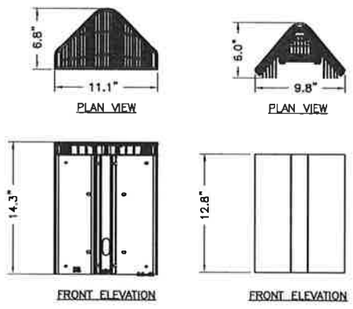
3/06 4T4R B12/14 320W AIRSCALE DUAL RRH
NTS



WEIGHT = 66.1 LB

4/06 4T4R B25-B66 320W AIRSCALE DUAL RRH
NTS

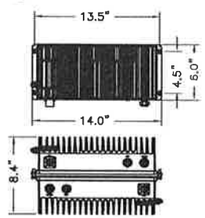
MAIN UNIT EXTENSION



MECHANICAL SPECIFICATIONS
MAIN UNIT (AEWD)
HEIGHT: 14.3 IN
WIDTH: 11.1 IN
DEPTH: 6.8 IN
WEIGHT: 26.5 LBS

EXTENSION (AEWE)
HEIGHT: 12.8 IN
WIDTH: 9.8 IN
DEPTH: 6.0 IN
WEIGHT: 11.0 LBS

5/06 AEWD/AEWE ANTENNA DETAIL
NTS



MECHANICAL SPECIFICATIONS
CCI MODEL: PSU-1200W-48-X
HEIGHT: 8.4 IN
WIDTH: 6.0 IN
DEPTH: 14.0 IN
WEIGHT: 23.3 LBS

6/06 TWIN RRU AC/DC POWER SUPPLY DETAIL
NTS

ENGINEERING FIRM

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
1777 SENTRY PARKWAY WEST
VEVA 17, SUITE 400
BLUE BELL, PA 19422
(267) 460-0122

APPLICANT

at&t mobility corp.

SITE INFORMATION

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USID# 199507
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PROFESSIONAL STAMP

ENGINEER

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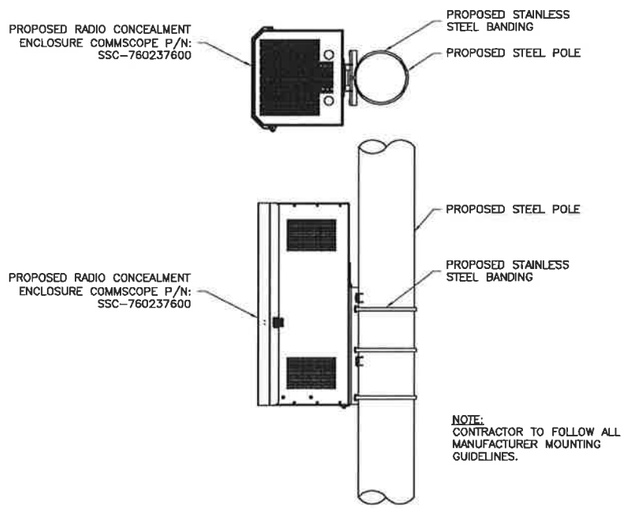
STATE OF DELAWARE
PROFESSIONAL ENGINEER
LICENSE #16876

SHEET TITLE

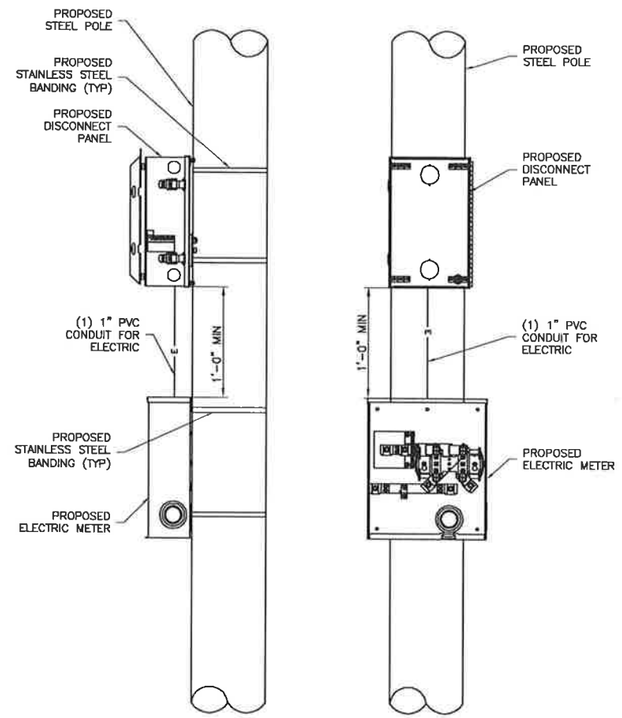
EQUIPMENT DETAILS

SHEET NUMBER

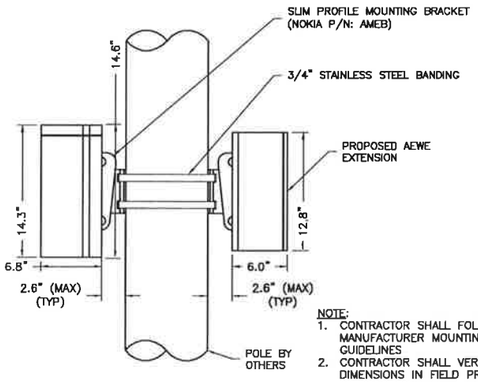
SHEET 06 OF 16



1/07 ENCLOSURE MOUNTING DETAIL
NTS



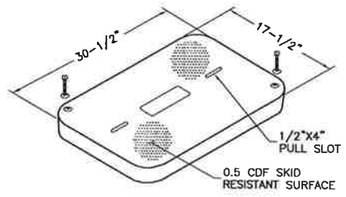
2/07 METER/DISCONNECT MOUNTING DETAIL
NTS



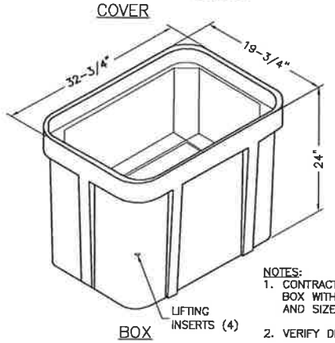
3/07 5G ANTENNA MOUNTING DETAIL
NTS

MOUNTING NOTE:

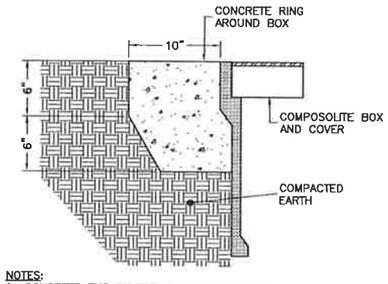
IF FIELD CONDITIONS DO NOT ALLOW FOR INSTALLATION AS DIRECTED, CONTRACTOR IS TO CONTACT ENGINEER FOR FURTHER INSTRUCTION.



COVER



BOX



NOTES:
1. CONCRETE ENCASEMENT TO BE 3,000 P.S.I. MINIMUM.
2. CONCRETE ENCASEMENT RING DIMENSION, D, TO BE EQUAL TO DESIGN PAVEMENT DEPTH.
3. PAVEMENT AND SUBGRADE TO BE AS SHOWN ON THE ENGINEERING PLANS.
4. QUAZITE DOES NOT RECOMMEND THE USE OF CONCRETE OR POLYMER CONCRETE BOXES IN HIGH VOLUME TRAFFIC APPLICATIONS.

NOTES:
1. CONTRACTOR TO ORDER HANDHOLE BOX WITH THE CORRECT NUMBER AND SIZE OF KNOCKOUTS NEEDED.
2. VERIFY DIMENSIONS OF UNIT.

4/07 PULL BOX DETAIL
NTS

ENGINEERING FIRM

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
1777 SENTRY PARKWAY WEST
VEVA 17, SUITE 400
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(267) 460-0122

APPLICANT

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PROFESSIONAL STAMP

ENGINEER

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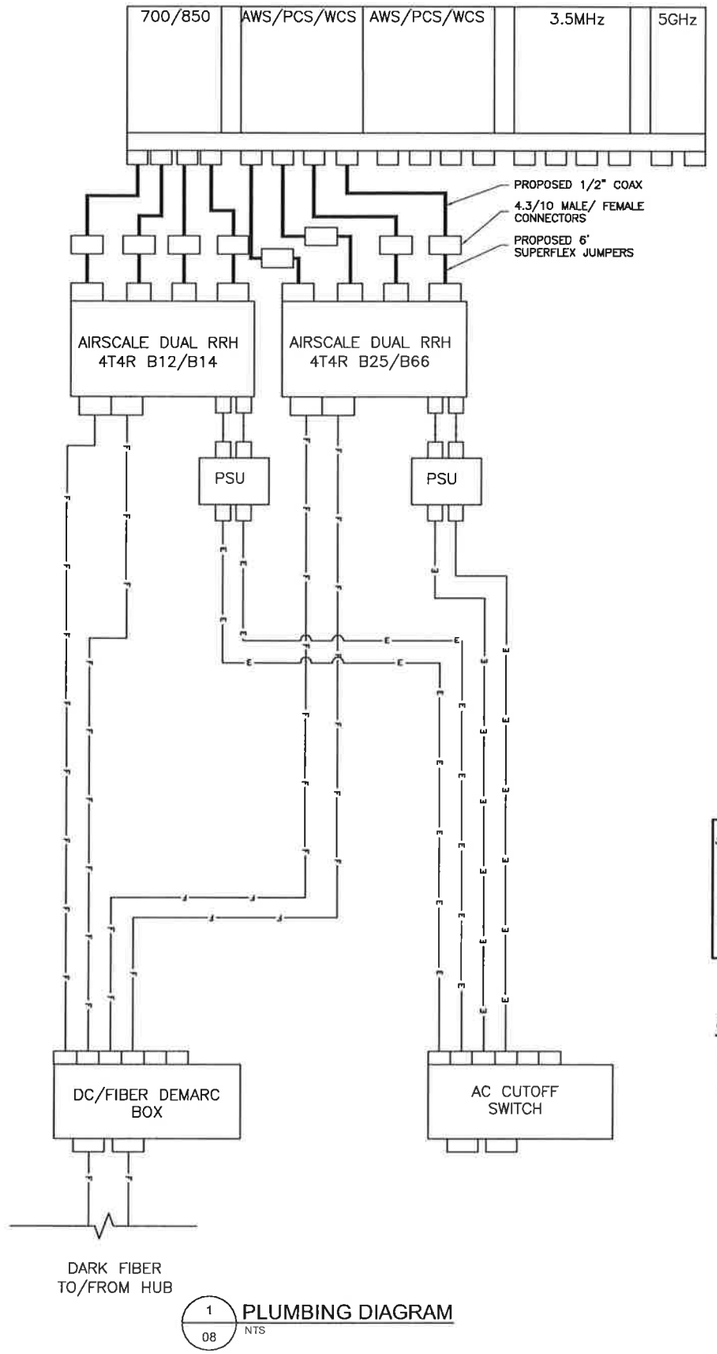
STATE OF DELAWARE
PROFESSIONAL ENGINEER
LICENSE #16876

SHEET TITLE

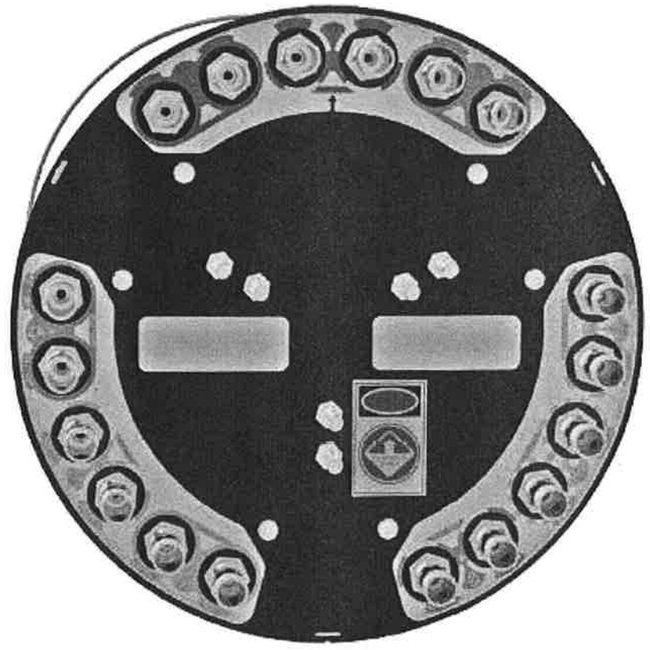
EQUIPMENT MOUNTING DETAILS

SHEET NUMBER

SHEET
07 OF 16



1/08 PLUMBING DIAGRAM NTS



2/08 OMNI ANTENNA COLOR CODE NTS

NOTE:

- B14 SHOULD NOTE BE ACTIVATED
- NO UNLICENSED RRH/LAA FOR MICRO LOCATION
- AC POWER (2 POWER FEED FOR EACH RADIO)
- 2ND CPRI FOR 5G NR

CONSTRUCTION REQUIREMENTS:

- 6 FIBERS FRONTHAUL REQUIRED
- PROVIDE 6 FOOT 1/4" SUPERFLEX JUMPERS FROM MAIN COAX
- CONNECT SUPERFLEX AND MAIN COAX RUN USING JMA 4.3/10 MALE MALE CONNECTOR (UXP*4MT-12S) AND JMA 4.3-10 FEMALE CONNECTOR (UXP-4F-12S).

ENGINEERING FIRM

NB+C TOTALLY COMMITTED.

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LICENSE #16876

SHEET TITLE

RF PLUMBING DIAGRAM

SHEET NUMBER

SHEET 08 OF 16

6"

NOTICE

AT&T ope[illegible] antennas at this structure.

Above this point you are entering an area where radio frequen[illegible] fields may exceed the FCC General Po[illegible]ion exposure limits.

Follow saftey guid[illegible] for working in an RF environment.

Keep XX ft. away fro[illegible] antennas.

CONTACT AT&T a[illegible] 800-638-2822, opt. 9, 3, and follow their instru[illegible]ns prior to performing any maintenance or repair[illegible]ove this point.

THIS IS AT&T SIT[illegible] USID[illegible]

6"

NOTE:
PLACE (2) CAUTION SIGNS [illegible] EACH OTHER 1 FOOT ABOVE TH[illegible]RVICE DROP

6½"

NOTICE

RF energy emitted by this antenna *may* exceed the FCC's exposure limits for the general population.
Stay at least X X feet away from the ant[illegible]a.
Call AT&T at 800-638-2822, option 9 then 3, fo[illegible]elp if you need access within X X feet.

2½"

NOTE:
PLACE (2) 2.5"X6.5" CAUTION STICKERS OPPOSITE EACH OTHER AROUND THE BOTTOM OF THE ANTENNA RADOME.

1/09 RF LABEL DETAILS
NTS

DMARC/FST FIBER DESIGNATION
LINE 1: CIRCUIT ID & JACK #
LINE 2: RADIO COMMON ID & CPRI PORT

RADIO DESIGNATION
LINE 1: RADIO COMMON ID
LINE 2: NODE USID

RADIO FIBER DESIGNATION
LINE 1: RADIO COMMON ID & CPRI PORT
LINE 2: CIRCUIT ID & JACK #

LABELING REQUIREMENTS

DMARC/FST Label

LINE 1: FIBER CABLE & COUNT
LINE 2: JACK #

RADIO LABEL

LINE 1: RADIO COMMON ID
LINE 2: NODE USID

DMARC/FST Fiber Label

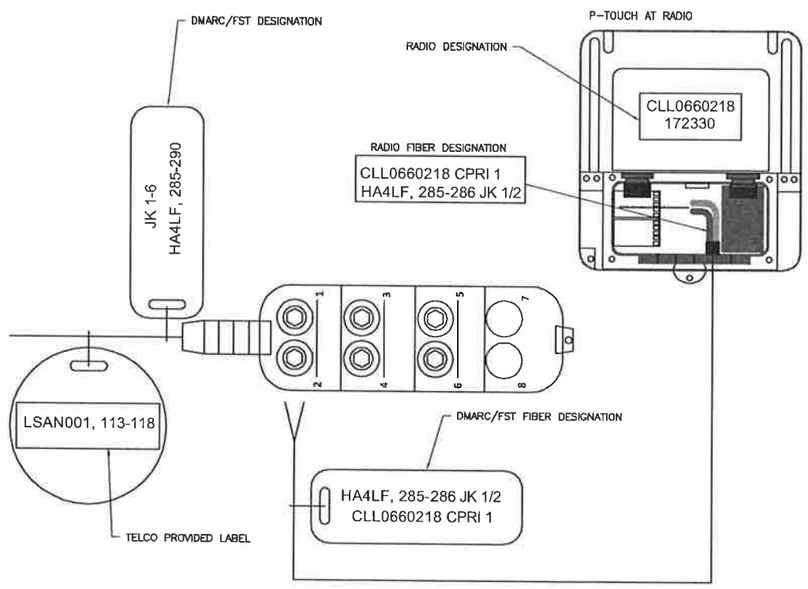
LINE 1: FIBER CABLE, COUNT & JACK #
LINE 2: RADIO COMMON ID & CPRI PORT

RADIO FIBER LABEL

LINE 1: RADIO COMMON ID & CPRI PORT
LINE 2: FIBER CABLE, COUNT & JACK #

*MINIMUM REQUIREMENTS

LABELING EXAMPLES



3/09 CRAN NODE LABELING
NTS

10"

Property of AT&T AUHORIZED PERSONNEL ONLY	**In case of emergency, or prior to performing maintenance on this site, call 800-638-2822 and reference USID number _____ FA#_____**

1½"

NOTE:
PLACE 1.5"X10" SITE ID SIGN ON FACE OF CABINET AND OR AS NOTED ON PLANS

2/09 EMERGENCY CONTACT SIGNAGE DETAIL
NTS

MOUNTING NOTE:

IF FIELD CONDITIONS DO NOT ALLOW FOR INSTALLATION AS DIRECTED, CONTRACTOR IS TO CONTACT ENGINEER FOR FURTHER INSTRUCTION.

ENGINEERING FIRM

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1777 SENTRY PARKWAY WEST
VEVA 17, SUITE 400
BLUE BELL, PA 19422
(267) 460-0122

APPLICANT

at&t mobility corp.

SITE INFORMATION

FA# 14815360
PACE# MRPHL026861
USID# 199507
WLMG2 NODE 14H
PROPOSED LIGHT POLE
200 WHITECHAPEL DRIVE
NEWARK, DE 19713
CITY OF NEWARK
NEW CASTLE COUNTY

DESIGN RECORD

REVISIONS

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1	02/09/21	REVISED PER COMMENTS	KRK
0	01/26/21	PRELIMINARY CDs	JC

PROFESSIONAL STAMP

ENGINEER

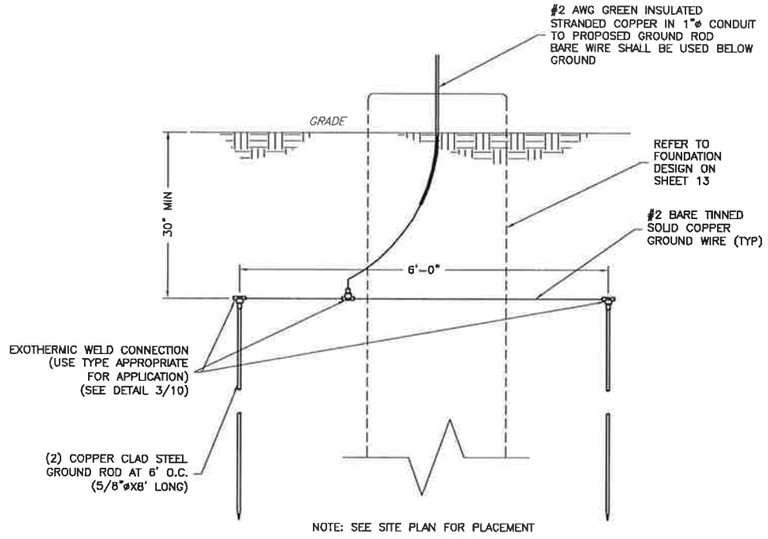
KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF DELAWARE
PROFESSIONAL ENGINEER
LICENSE #16876

SHEET TITLE

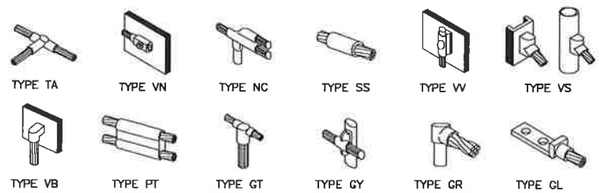
SIGNS & EQUIPMENT LABELING DETAILS

SHEET NUMBER

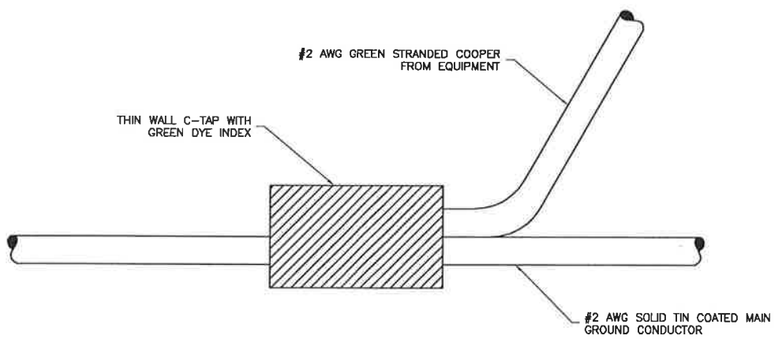
SHEET
09 OF 16



1/10 TYPICAL GROUND ROD DETAIL
NTS



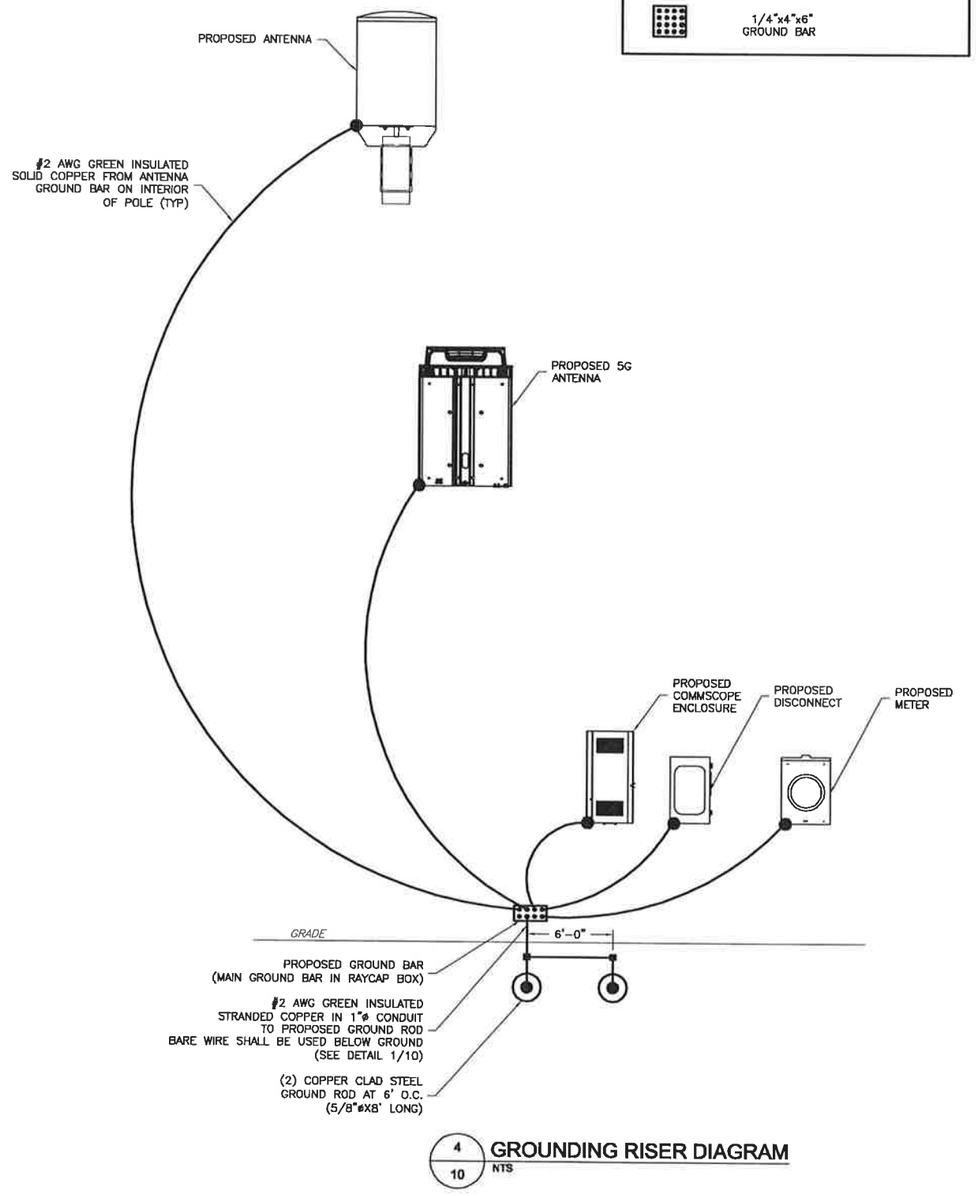
2/10 GROUNDING CONNECTION DETAILS
NTS



3/10 C-TAP DETAIL
NTS

GROUNDING LEGEND

- EXOTHERMIC WELD CONNECTION
- COMPRESSION FITTING CONNECTION
- 3/4"X10' COPPER-CLAD STEEL GROUND ROD
- PROPOSED GROUND WIRING
- EXISTING GROUND WIRING
- 1/4"x4"x6" GROUND BAR



4/10 GROUNDING RISER DIAGRAM
NTS

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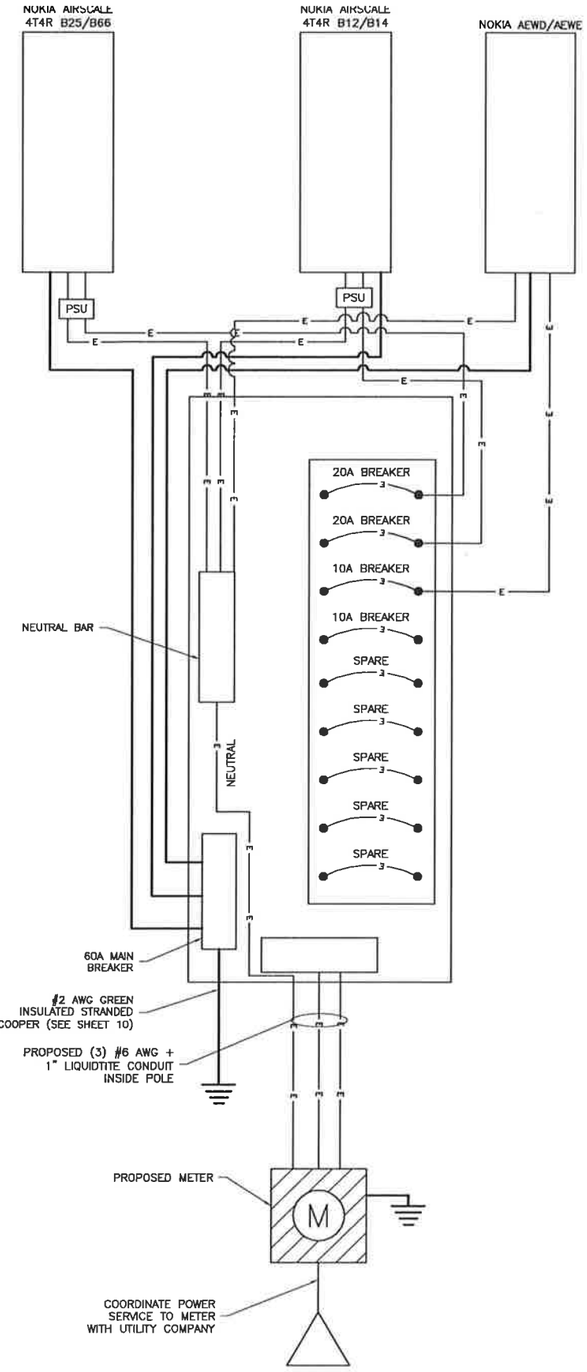
SHEET TITLE

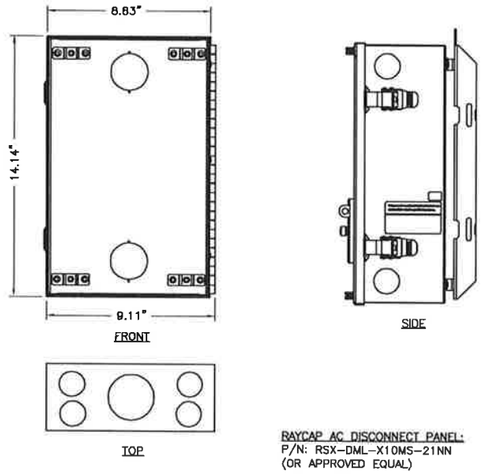
GROUNDING DETAILS

SHEET NUMBER

SHEET
10 OF 16

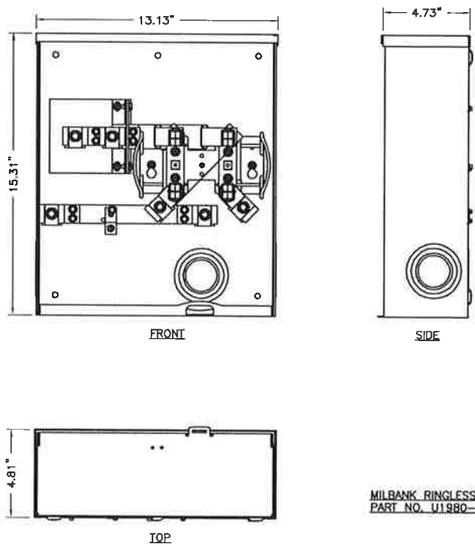


1/11 POWER DIAGRAM
NTS



RAYCAP AC DISCONNECT PANEL:
P/N: RSX-DML-X10MS-21NN
(OR APPROVED EQUAL)

2/11 PROPOSED DISCONNECT PANEL DETAIL
NTS



MILBANK RINGLESS METER SOCKET:
PART NO. U1980-O-KK

3/11 METER SOCKET DETAIL
NTS

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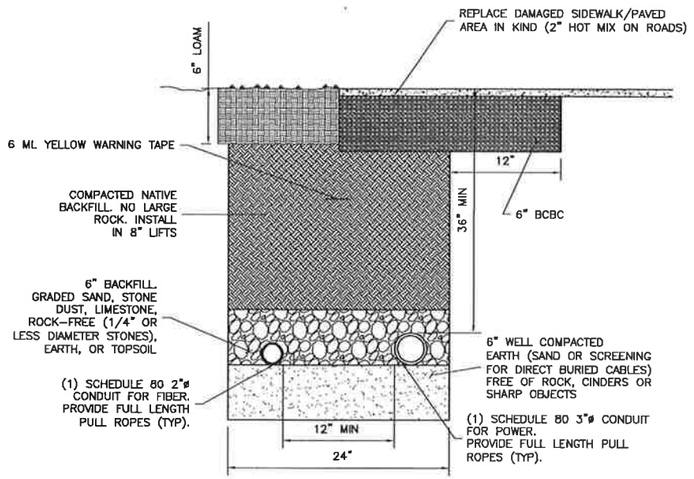
SHEET TITLE

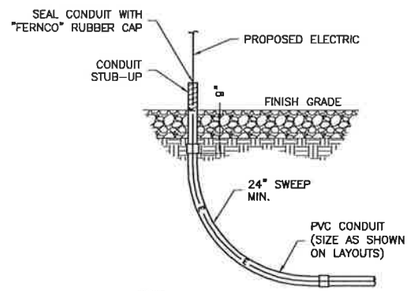
POWER DIAGRAM & DETAILS

SHEET NUMBER

SHEET 11 OF 16

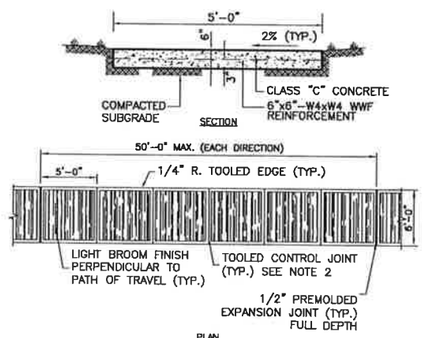


1/12 UTILITY TRENCH DETAIL
NTS



NOTE:
CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF CONDUIT STUB-UP

2/12 CONDUIT STUB-UP DETAIL
NTS



NOTES:

1. PLACE 1/2" PREMOLDED EXPANSION JOINT MATERIAL FOR THE FULL DEPTH OF THE SIDEWALK AT 50' INTERVALS OPPOSITE EXPANSION JOINTS IN ADJACENT CURB, BETWEEN THE SIDEWALK AND CURB AND BETWEEN THE SIDEWALK AND ANY RIGID STRUCTURES.
2. FORM TRANSVERSE TOOLED CONTROL JOINTS AT 5 FOOT INTERVALS, APPROXIMATELY 1/8" WIDE AND AT LEAST 1" DEEP OR PER SCORING DETAIL PLANS WHEN PROVIDED.
3. ALL EXPOSED CONCRETE SHALL BE SEALED WITH AQURON CPT-2000 OR APPROVED EQUAL.
4. EXISTING CONCRETE TO BE REMOVED, ADJACENT TO EXISTING CONCRETE TO REMAIN, SHALL BE SAW CUT FULL DEPTH AT AN EXISTING CONTROL JOINT.

3/12 SIDEWALK DETAIL
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SHEET TITLE

CONSTRUCTION DETAILS

SHEET NUMBER

SHEET
12 OF 16

CONCRETE GENERAL NOTES

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND TO THE PROJECT SPECIFICATIONS.
2. ALL CONCRETE IS TO BE NORMAL DENSITY CONCRETE WITH A MAXIMUM SLUMP OF 4 INCHES. MAXIMUM AGGREGATE SIZE 3/4 INCH. NO ADDITIONAL WATER SHALL BE ADDED TO THE CONCRETE AT THE JOB SITE.
3. PROVIDE AIR ENTRAINMENT OF 4 TO 6 PERCENT IN ALL EXPOSED CONCRETE WORK WITH AIR-ENTRAINING ADMIXTURE COMPLYING WITH ASTM C 260. AT TROWEL-FINISHED FLOORS, DO NOT EXCEED AIR-ENTRAINMENT CONTENT OF 3 PERCENT.
4. NO HOLES OR SLEEVES SHALL BE MADE THROUGH CONCRETE WORK OTHER THAN THOSE INDICATED ON THE STRUCTURAL DRAWINGS WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.
5. ALL FORMWORK OFFSET TOLERANCES (PER ACI 117) TO BE CLASS A.
6. FLOOR SLAB TOLERANCES TO ASTM E1155; SPECIFIED OVERALL MINIMUM VALUE OF FLATNESS F F=25 WITH LOCAL MINIMUM F F=17, AND MINIMUM VALUE OF LEVELNESS F F=20 WITH LOCAL MINIMUM F I AND F F WITHIN 72 HOURS OF SLAB CONSTRUCTION.
7. CABINETS ON SLAB (IF APPLICABLE). ALLOWABLE CAPACITY OF CONCRETE USED IN DESIGN MIN. 3500 PSI.

FOUNDATION NOTES:

1. DESIGN INFORMATION AND GENERAL REQUIREMENTS

1.1 CODES

A. DESIGN CONFORMS TO INTERNATIONAL BUILDING CODE 2015.

B. AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318-14.

2. EARTHWORK

2.1 FOUNDATIONS

A. FOUNDATIONS HAVE BEEN DESIGNED TO BEAR ON (UNDISTURBED RESIDUAL SOILS/COMPACTED STRUCTURAL FILL), CAPABLE OF SAFELY SUPPORTING A BEARING PRESSURE OF 3000 PSF. IF FOUNDATION CONDITIONS PROVE UNACCEPTABLE AT ELEVATIONS SHOWN, EXCAVATION SHALL BE CARRIED DEEPER AND SHALL BE BACKFILLED WITH LEAN CONCRETE TO PLAN FOOTING BOTTOM, OR REDESIGN OF FOUNDATIONS WILL BE REQUIRED AT THE DIRECTION OF THE ENGINEER.

B. DESIGN, FURNISH AND INSTALL ALL TEMPORARY SHEETING, SHORING AND DRAINAGE NECESSARY TO MAINTAIN THE EXCAVATION AND PROTECT SURROUNDING STRUCTURES AND UTILITIES.

C. THOROUGHLY COMPACT ALL BOTTOM OF FOOTINGS PRIOR TO PLACING ANY CONCRETE.

3. CONCRETE

3.1 FORMWORK

A. CONCRETE CONSTRUCTION SHALL CONFORM TO "SPECIFICATIONS FOR STRUCTURAL, CONCRETE FOR BUILDINGS," (ACI 301).

B. FORMWORK SHALL CONFORM TO ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS."

3.2 REINFORCEMENT

A. REINFORCING STEEL ASTM A615, GRADE 60. WELDED WIRE ASTM A185 (FLAT SHEET). LAPS 40 BAR DIAMETERS UNLESS NOTED. BARS SHALL BE SECURELY HELD IN ACCURATE POSITION BY SUITABLE ACCESSORIES, TIE BARS, SUPPORT BARS, ETC. HOOK LENGTHS SHALL BE 12 BAR DIAMETERS.

B. CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED.

FOOTINGS & SLABS CAST AGAINST GROUND	3"
CONCRETE TO BE IN CONTACT WITH GROUND OR WEATHER AT BARS GREATER THAN #5	2"
AT BARS #5 OR LESS	1-1/2"
CONCRETE NOT TO BE EXPOSED TO GROUND OR WEATHER BEAMS, GIRDERS & COLUMNS	1-1/2"
SLABS & WALLS	3/4"

3.3 CAST-IN-PLACE-CONCRETE

A. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH, FC' OF 4000 PSI AT 28 DAYS U.N.O.

B. MIX DESIGN TO BE IN ACCORDANCE WITH ACI 318, CHAPTER 5. NO CALCIUM CHLORIDE OR ADMIXTURE CONTAINING CHLORIDES SHALL BE USED IN ANY CONCRETE.

C. COARSE AGGREGATE FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33 SIZE #57. COARSE AGGREGATE FOR LIGHT WEIGHT CONCRETE SHALL CONFORM TO ASTM C330 GRADED 3/4" TO 1/4".

D. COLD WEATHER PLACEMENT SHALL COMPLY WITH ACI 306.1

E. HOT WEATHER PLACEMENT SHALL COMPLY WITH ACI 305 R.

F. CHAMFER ALL EXPOSED EDGES 3/4".

G. THE MAXIMUM TEMPERATURE OF ALL CONCRETE AT DELIVERY TO THE SITE SHALL BE 85°F, TOTAL DELIVERY TIME SHALL BE LESS THEN 75 MINUTES.

CONCRETE TESTING:

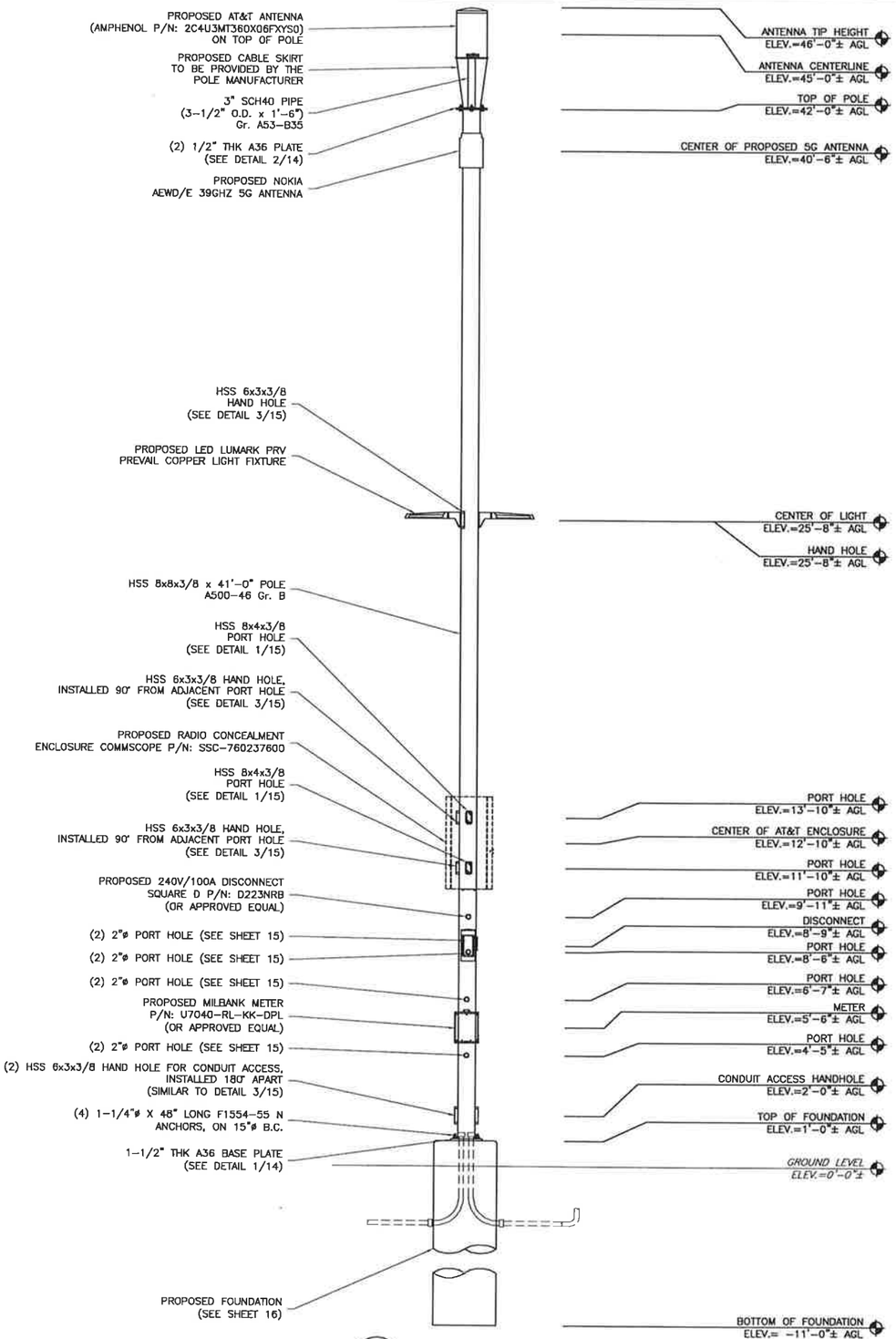
1. SLUMP TEST SHALL BE PERFORMED ON-SITE TO ENSURE WORKABILITY OF CONCRETE
2. ALL TEST CYLINDERS SHALL BE MADE AND CURED IN ACCORDANCE WITH ASTM C31. COMPRESSION TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM C39.
3. CYLINDERS TO BE BROKEN ON DAYS 7 AND 28. (2) ADDITIONAL CYLINDERS SHOULD BE AVAILABLE FOR ANY ADDITIONAL TESTING.
4. A SUFFICIENT SAMPLING OF CONCRETE SHALL BE TAKEN TO ENSURE A FAIR REPRESENTATION OF THE CONCRETE USED FOR ALL SLUMP AND COMPRESSION TESTS. NON-COMFORMING MATERIAL SHALL NOT BE ACCEPTED BY CONTRACTOR.

STRUCTURAL NOTES

1. THE STRUCTURAL STEEL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANCHOR BOLT LOCATIONS, ELEVATION OF TOP OF CONCRETE AND BEARING PLATES, ALIGNMENT ETC. PRIOR TO START OF STEEL ERECTION.
2. THE LATEST EDITION OF THE FOLLOWING SPECIFICATIONS SHALL GOVERN:
   A. AISC - "ALLOWABLE STRESS DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
   B. AISC - "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
   C. AWS - "D1.1 STRUCTURAL WELDING CODE - STEEL".
3. MATERIAL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS

STRUCTURAL WIDE FLANGE & M SHAPES	A992 OR A572 Fy = 50KSI
OTHER STRUCTURAL SHAPES AND PLATES	A36, Fy = 36 KSI
STRUCTURAL TUBING	A500, GRADE B Fy = 46 KSI
HIGH STRENGTH BOLTS	A325
THREADED RODS	A354, GRADE BC
ANCHOR BOLTS	A325 OR A354 BC
PIPE (HANDRAIL)	SCH 40 PIPE

4. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 USING E70XX ELECTRODES. UNLESS OTHERWISE NOTED PROVIDE CONTINUOUS MINIMUN SIZED FILLET WELDS PER AISC REQUIREMENTS.
5. HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED. ALL HOLES IN BEARING PLATES SHALL BE DRILLED.
6. ALL STEEL TO BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123.
7. EPOXY ANCHORS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
8. ALL BOLTS SHALL BE TIGHTENED USING TURN-OF-THE-NUT METHOD PER AISC SPECIFICATIONS USING STANDARD HOLES.
9. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND FIT PRIOR TO FABRICATION.
10. THE FABRICATOR SHALL FURNISH CHECKED SHOP AND ERECTION DRAWINGS TO THE ENGINEER, AND OBTAIN APPROVAL PRIOR TO FABRICATING ANY STRUCTURAL STEEL. SHOP DRAWINGS SHALL CONFORM TO AISC "DETAILING FOR STEEL CONSTRUCTION".



1/13 POLE ELEVATION
SCALE: 3/8" = 1'-0"

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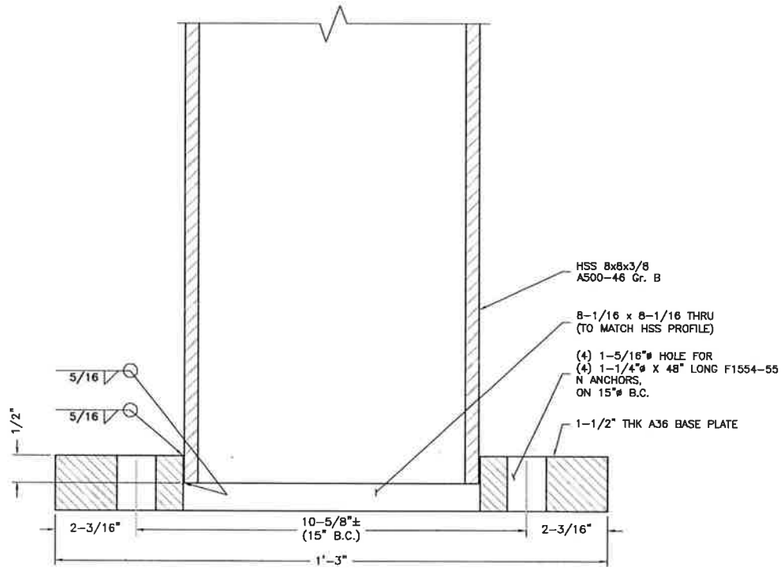
SHEET TITLE

POLE ELEVATION & NOTES

SHEET NUMBER

SHEET
13 OF 16



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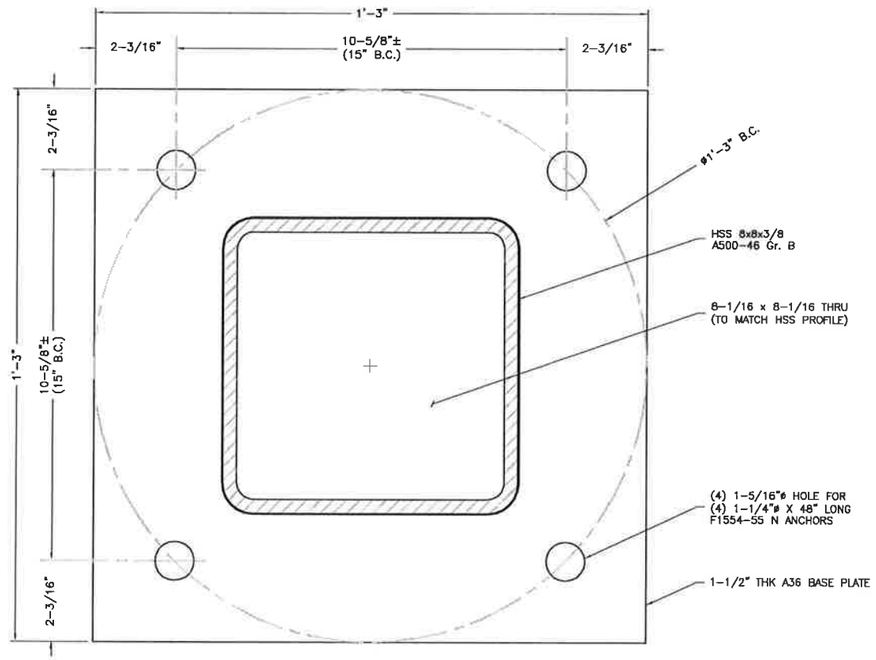
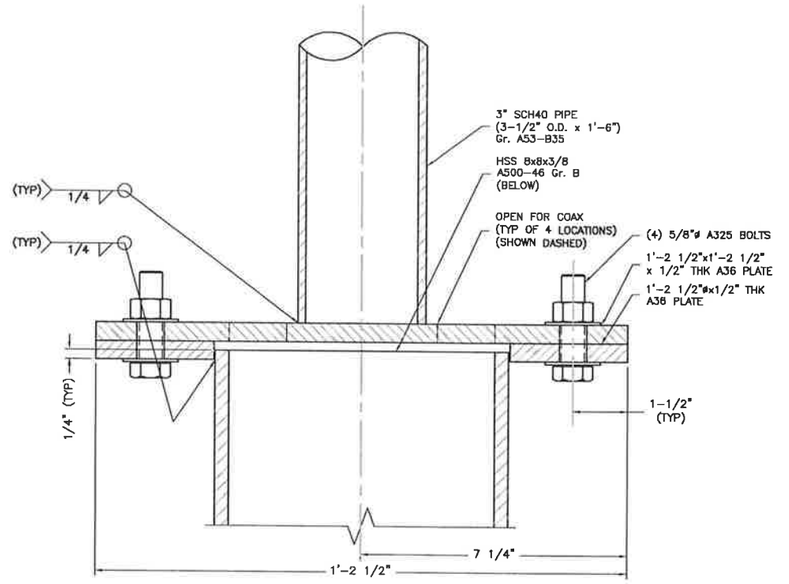


PLAN

1 / 14 BASE PLATE DETAIL
SCALE: 6" = 1'-0"



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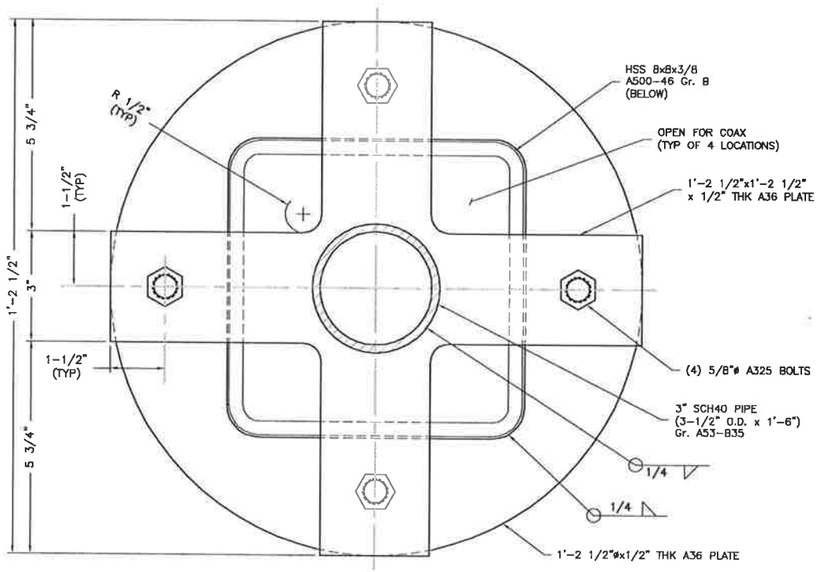

PLAN

2 / 14 CAP PLATE DETAIL
SCALE: 6" = 1'-0"

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STRUCTURAL DETAILS - PLATES

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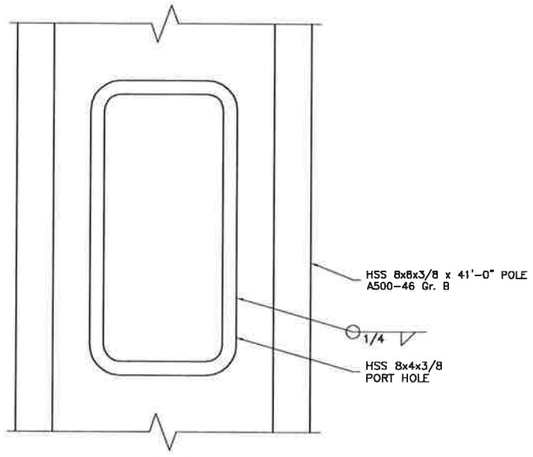
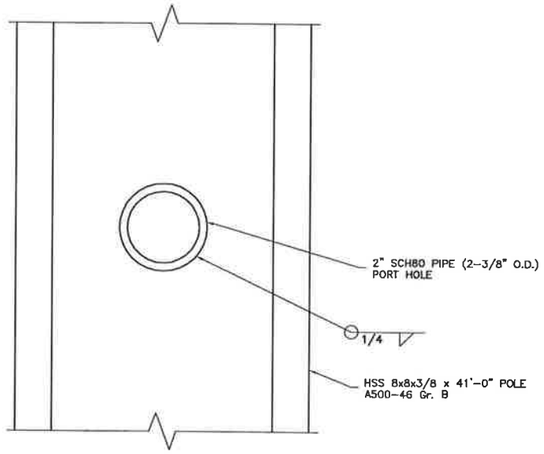
14 OF 16



ELEVATION

NOTE:
ALL PORT HOLES REQUIRE CABLE ENTRY/EXIT GROMMETS



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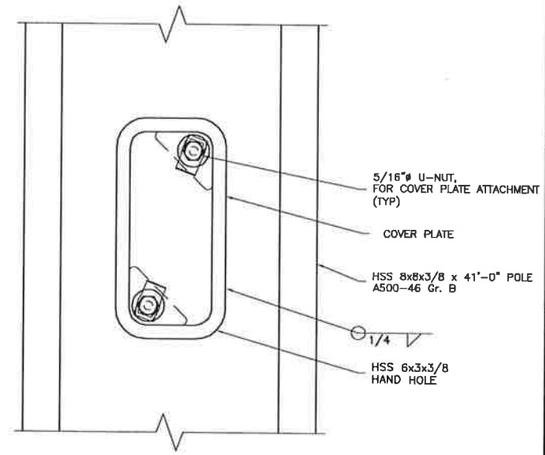

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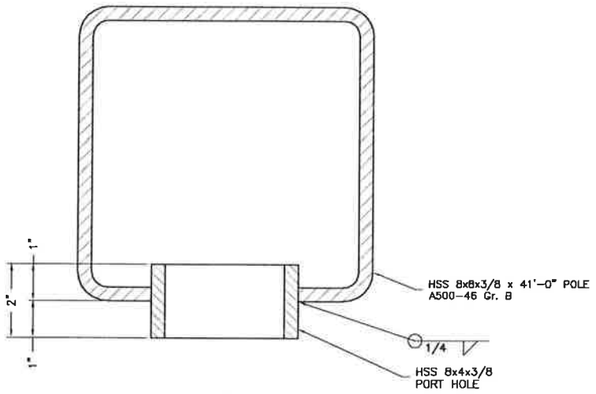
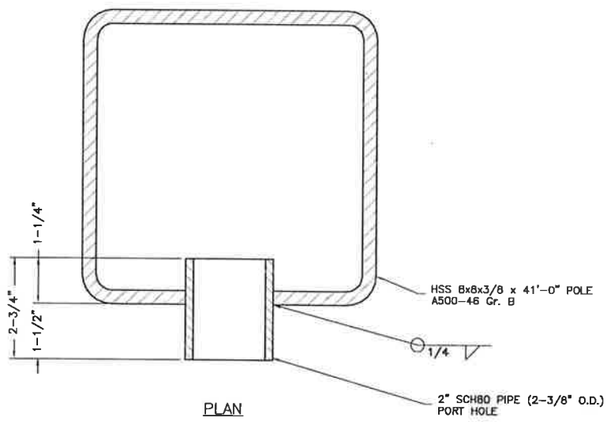


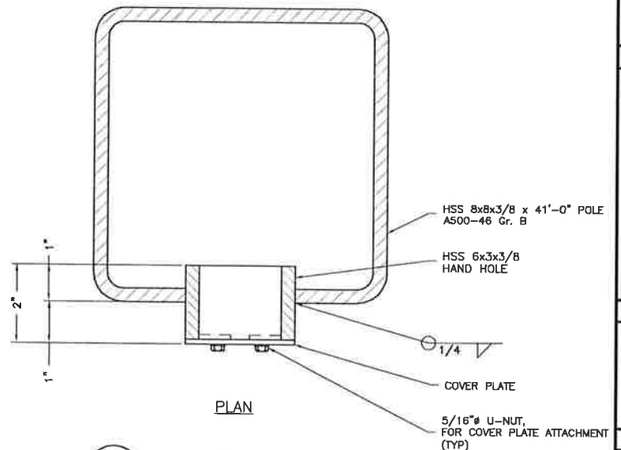
PLAN

1/15 PORT HOLE DETAIL - A
SCALE: 6" = 1'-0"



PLAN

2/15 PORT HOLE DETAIL - B
SCALE: 6" = 1'-0"



PLAN

3/15 HAND HOLE DETAIL
SCALE: 6" = 1'-0"

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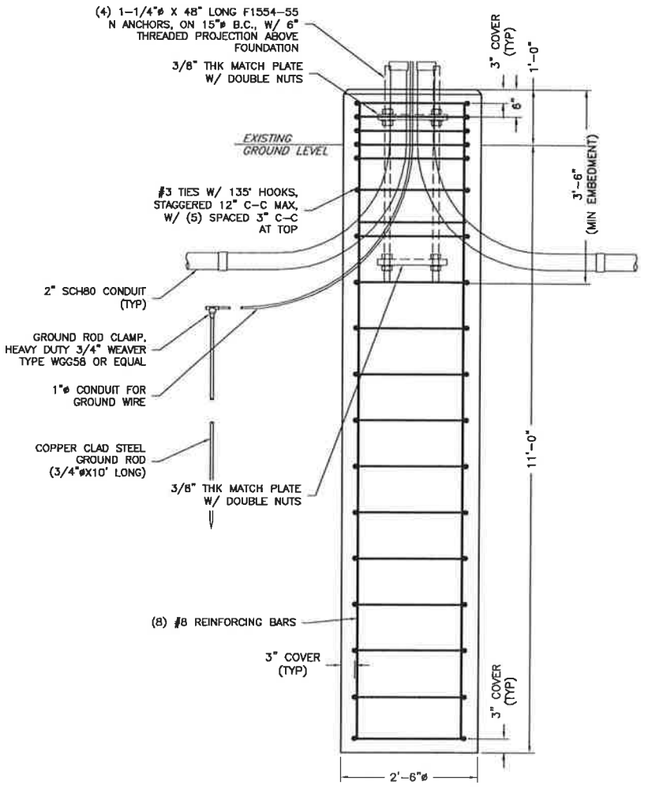
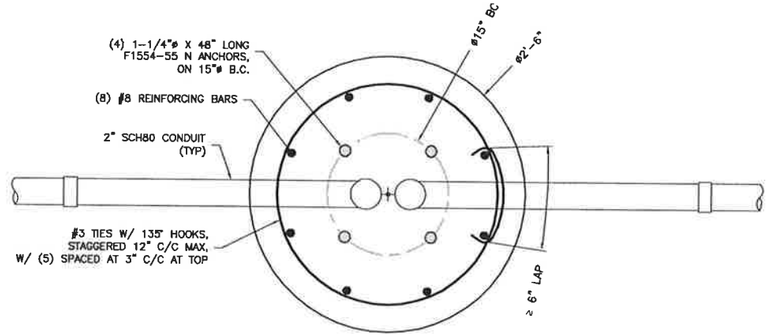
SHEET NUMBER

SHEET 15 OF 16



1/16 FOUNDATION ELEVATION
SCALE: NTS



2/16 FOUNDATION PLAN
SCALE: NTS

ENGINEERING FIRM

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
1777 SENTRY PARKWAY WEST
VEVA 17, SUITE 400
BLUE BELL, PA 19422
(267) 460-0122

APPLICANT

at&t mobility corp.

SITE INFORMATION

FA# 14815360
PACE# MRPHL026861
USID# 199507
WLMG2 NODE 14H
PROPOSED LIGHT POLE
200 WHITECHAPEL DRIVE
NEWARK, DE 19713
CITY OF NEWARK
NEW CASTLE COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
1	02/09/21	REVISED PER COMMENTS	KRK
0	01/26/21	PRELIMINARY CDs	JC

PROFESSIONAL STAMP

ENGINEER

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF DELAWARE
PROFESSIONAL ENGINEER
LICENSE #16876

SHEET TITLE

FOUNDATION DETAILS

SHEET NUMBER

SHEET 16 OF 16